#1

Access DB# 176480

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Sin J. Lee Examiner #: 76060 Date: 1-12-2006
Art Unit: 1752 Phone Number 30 27333 Serial Number: 10/080,507
Mail Box and Bldg/Room Location: 9D60 (Rem.) Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Plz. See B-6

Inventors (please provide full names):

Earliest Priority Filing Date:

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

plz. Search for a polymer [redacted] made from the [redacted] monomer shown in claim #25.

(give me a call if the search becomes too broad !!!)

****

STAFF USE ONLY	Type of Search	Vendors and cost where applicable
Searcher: LH	NA Sequence (#)	STN $ 64.18
Searcher Phone #:	AA Sequence (#)	Dialog
Searcher Location:	Structure (#) 1	Questel/Orbit
Date Searcher Picked Up:	Bibliographic	Dr.Link
Date Completed: 1/17/06	Litigation	Lexis/Nexis
Searcher Prep & Review Time: 30	Fulltext	Sequence Systems
Clerical Prep Time: 30	Patent Family	WWW/Internet
Online Time: 70	Other	Other (specify)

PTO-1590 (8-01)

16. (Original) The process according to claim 15, which further comprises baking step(s) before and/or after step (b).

17. (Original) The process according to claim 16, wherein the baking step(s) are performed at a temperature of 50°C to 200°C.

18. (Original) The process according to claim 14, wherein the developing step (c) is carried out using an aqueous solution of TMAH (tetramethylamine hydroxide).

19. (Original) A semiconductor element manufactured by using a process according to claim 14.

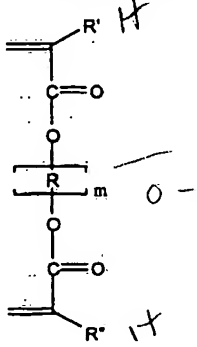
20. - 21.(Canceled)

22. (New) The photoresist copolymer according to claim 1 wherein said mixture of monomers further comprises maleic anhydride.

23. (New) The process according to claim 5 wherein the mixture of monomers further comprises maleic anhydride.

24. (New) The photoresist copolymer according to claim 1 wherein the cross-linking monomer is 1,3-butanediol diacrylate or 1,4-butanediol diacrylate.

25. (New) A photoresist copolymer comprising the polymerization product of two or more alicyclic olefin derivatives and a cross-linking monomer of the formula:



AK C1~C10

0-10

wherein

each of R' and R" is independently hydrogen or methyl;

m is an integer from 1 to 10; and

R is straight or branched C_{1-10} alkyl, optionally comprising an ester, a ketone, a carboxylic acid, an acetal, a hydroxyl group or a combination thereof.

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WASHINGTON, D.C. 20231
www.uspto.gov

BIBDATASHEET

Bib Data Sheet

CONFIRMATION NO. 1185

SERIAL NUMBER	FILING DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
10/080,507	02/22/2002 RULE	430	1752	00939B-068710US

APPLICANTS

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Min Ho Jung, Ichon-shi, KOREA, REPUBLIC OF;Geun Su Lee, Ichon-shi, KOREA, REPUBLIC OF;
Ki Ho Baik, Ichon-shi, KOREA, REPUBLIC OF;

** CONTINUING DATA **********

This application is a CIP of 09/465,111 12/16/1999 ABN SJL

** FOREIGN APPLICATIONS **********

REPUBLIC OF KOREA 98-63793 12/31/1998 SJL

IF REQUIRED, FOREIGN FILING LICENSE GRANTED
** 04/11/2002

Foreign Priority claimed	STATE OR COUNTRY	SHEETS	TOTAL	INDEPENDENT
☑ yes ☐ no 35 USC 119 (a-d) conditions met ☑ yes ☐ no ☐ Met after Allowance Verified and Acknowledged Examiner's Signature SJL Initials	KOREA, REPUBLIC OF	DRAWING 2	CLAIMS 19	CLAIMS 2

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20350
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SAN FRANCISCO , CA
94111-3834

TITLE
Cross-linking monomers for photoresist, and process for preparing photoresist polymers using the same

☐ All Fees

h e e e e e c e ce e b hee c b

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=> d his ful

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                E US20020177069/PN
L1            1 SEA ABB=ON  PLU=ON  US20020177069/PN
                D ALL
                SEL RN

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                282529-67-3/BI OR 66003-78-9/BI OR 75-59-2/BI OR
                78-67-1/BI)
                D SCAN
                D 1-6 CRN STR
                D 1-6 RN STR

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L3              STR

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L4           50 SEA SSS SAM L3
                D QUE STAT
L5        41781 SEA SSS FUL L3
                SAV L5 LEE507/A

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L6        46702 SEA ABB=ON  PLU=ON  L5
L7       108407 SEA ABB=ON  PLU=ON  RESIST OR RESISTS OR PHOTORESIST?
                OR PHOTOMASK? OR (PHOTO# OR POSITIVE OR NEGATIVE)(A)(RE
                SIST# OR LITHOG? OR MASK?)
L8         3206 SEA ABB=ON  PLU=ON  L6 AND L7

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                D SCAN
L11           2 SEA ABB=ON  PLU=ON  L5 AND L2
                D SCAN
L12         163 SEA SUB=L5 SSS FUL L9
                SAV L12 LEE507A/A
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L18       287558 SEA ABB=ON  PLU=ON  CROSSLINK? OR CROSS(A)LINK?
L19          512 SEA ABB=ON  PLU=ON  L18 AND L8
L20            1 SEA ABB=ON  PLU=ON  L1 AND L19
L21           69 SEA ABB=ON  PLU=ON  L19 AND KETONE
L22          147 SEA ABB=ON  PLU=ON  L19 AND ESTER
L23            0 SEA ABB=ON  PLU=ON  L19 AND (CARBOXYL)(A)ACID
L24            8 SEA ABB=ON  PLU=ON  L19 AND ACETAL?
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                 D SCAN
L26           15 SEA ABB=ON  PLU=ON  L19 AND (HYDROX?(A)(GROUP? OR
                 UNIT? OR MOIET? OR RADICAL? OR SUBSTITUENT?))
L27            0 SEA ABB=ON  PLU=ON  L13 AND L1
L28         1808 SEA ABB=ON  PLU=ON  L6(L)L7
L29            1 SEA ABB=ON  PLU=ON  L1 AND L28
                 D QUE STAT
L30           67 SEA ABB=ON  PLU=ON  L28(L)L18
L31            1 SEA ABB=ON  PLU=ON  L30(L)KETONE
                 D SCAN
L32            3 SEA ABB=ON  PLU=ON  L30(L)ESTER
                 D SCAN
L33            0 SEA ABB=ON  PLU=ON  L1 AND L32
L34           12 SEA ABB=ON  PLU=ON  L30 AND KETONE
L35           18 SEA ABB=ON  PLU=ON  L30 AND ESTER
L36           39 SEA ABB=ON  PLU=ON  L19 AND CARBOXYL?(A)ACID?
L37           23 SEA ABB=ON  PLU=ON  L28 AND (HYDROX?(A)(GROUP? OR
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L38          722 SEA ABB=ON  PLU=ON  L28 AND (KETONE OR ESTER OR
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L40            1 SEA ABB=ON  PLU=ON  L1 AND L39
L41           32 SEA ABB=ON  PLU=ON  L39 AND (UV OR ULTRA(A)VIOLET? OR
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U(W)V)
L42 115 SEA ABB=ON PLU=ON L39 AND (1840-2002)/PY,PRY
L43 31 SEA ABB=ON PLU=ON L41 AND (1840-2002)/PY,PRY
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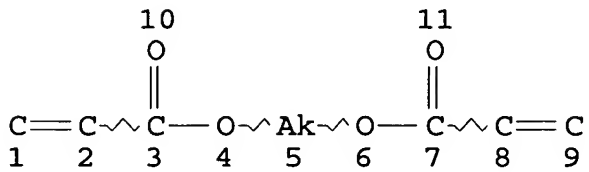
L44 1 SEA ABB=ON PLU=ON L41 AND L1

=> => d que stat l41
L3 STR



NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 11

STEREO ATTRIBUTES: NONE
L5 41781 SEA FILE=REGISTRY SSS FUL L3
L6 46702 SEA FILE=HCAPLUS ABB=ON PLU=ON L5
L7 108407 SEA FILE=HCAPLUS ABB=ON PLU=ON RESIST OR RESISTS OR PHOTORESIST? OR PHOTOMASK? OR (PHOTO# OR POSITIVE OR NEGATIVE)(A)(RESIST# OR LITHOG? OR MASK?)
L18 287558 SEA FILE=HCAPLUS ABB=ON PLU=ON CROSSLINK? OR CROSS(A)LINK?
L28 1808 SEA FILE=HCAPLUS ABB=ON PLU=ON L6(L)L7
L38 722 SEA FILE=HCAPLUS ABB=ON PLU=ON L28 AND (KETONE OR ESTER OR CARBOXYLIC(A)ACID? OR ACETAL? OR HYDROX?(A)(GROUP? OR UNIT? OR MOIET? OR RADICAL? OR SUBSTITUENT?))
L39 122 SEA FILE=HCAPLUS ABB=ON PLU=ON L38 AND L18
L41 32 SEA FILE=HCAPLUS ABB=ON PLU=ON L39 AND (UV OR ULTRA(A)VIOLET? OR U(W)V)

=> d l41 1-32 ibib abs hitstr hitind

L41 ANSWER 1 OF 32 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:580592 HCAPLUS

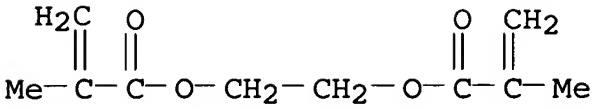
DOCUMENT NUMBER: 140:50213
TITLE: Ionic-bonded negative photosensitive polyimides having pendant aminoalkyl (meth)acrylamide groups
AUTHOR(S): Fukushima, Takafumi; Oyama, Toshiyuki; Tomoi, Masao
CORPORATE SOURCE: Graduate School of Engineering, Department of Advanced Materials Chemistry, Yokohama National University, 79-5, Tokiwadai, Hodogaya, Yokohama, 240-8501, Japan
SOURCE: Reactive & Functional Polymers (2003), 56(1), 59-73
CODEN: RFPOF6; ISSN: 1381-5148
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Soluble polyimides having pendant carboxyl groups were prepared by a direct one-pot polycondensation of various acid dianhydrides with 3,5-diaminobenzoic acid and bis[4-(3-aminophenoxy)phenyl]sulfone in the presence of γ-valerolactone/pyridine catalyst in 1-methyl-2-pyrrolidone (NMP)/toluene mixture at 180° C. The pendant carboxyl groups were blocked with photopolymerizable (meth)acrylamides, N-[3-(dimethylamino)propyl]acrylamide (DMAPAA), N-[3-(dimethylamino)propyl]methacrylamide (DMAPMA), or N-[3-(diethylamino)propyl]methacrylamide (DEAPMA), through ionic bonding at room temperature. The ionic-bonded photosensitive polyimide films containing photosensitizer Michler's **ketone** (MK) and ethylene glycol dimethacrylate (EGDMA) as an external multifunctional **crosslinker** gave neg.-tone behavior by near-**UV** irradiation followed by development with 10% aqueous NaOH at 25° C. The SEM photograph of the resultant images showed fine patterns (line/space 20/20 μm) with .apprx.15 μm in film thickness. The sensitivity of photosensitive polyimides with DMAPAA or DMAPMA was higher than that of photosensitive polyimides with (meth)acrylate **esters** such as 2-(dimethylamino)ethyl acrylate (DMAEA), 3-(dimethylamino)propyl acrylate (DMAPA), 2-(dimethylamino)ethyl methacrylate (DMAMA), and 2-(diethylamino)ethyl methacrylate (DEAMA).

IT **97-90-5**, Ethylene glycol dimethacrylate
RL: TEM (Technical or engineered material use); USES (Uses)
(external **crosslinker**; properties and neg. imaging of **photoresists** based on polyimides with pendant aminoalkyl (meth)acrylamide groups)

RN 97-90-5 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 1,2-ethanediyl ester (9CI) (CA INDEX

NAME)



CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT **Crosslinking**
(photochem.; properties and neg. imaging of photoresists based on polyimides with pendant aminoalkyl (meth)acrylamide groups)

IT **97-90-5**, Ethylene glycol dimethacrylate
RL: TEM (Technical or engineered material use); USES (Uses)
(external **crosslinker**; properties and neg. imaging of **photoresists** based on polyimides with pendant aminoalkyl (meth)acrylamide groups)

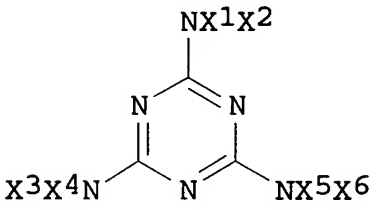
REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L41 ANSWER 2 OF 32 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:259900 HCAPLUS
DOCUMENT NUMBER: 138:278404
TITLE: Negative-working photosensitive resin compositions for solder resists and printed circuit boards thereof
INVENTOR(S): Ohno, Takao; Miura, Ichiro
PATENT ASSIGNEE(S): Tamura Kaken Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003098658	A2	20030404	JP 2001-291324	2001 0925
US 2003068567	A1	20030410	US 2002-252200	2002

0923
US 6756166 B2 20040629
PRIORITY APPLN. INFO.: JP 2001-291324 A
2001
0925

OTHER SOURCE(S): MARPAT 138:278404
GI



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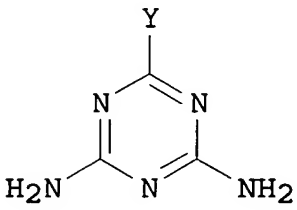


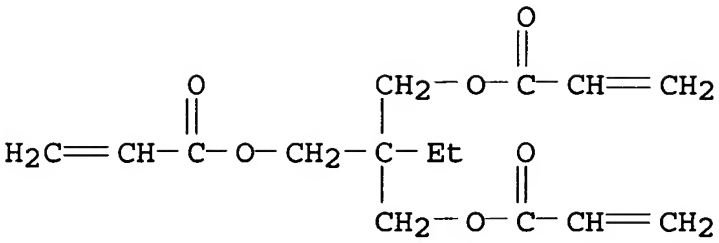
II

AB The neg. photosensitive resin compns. contain (A) actinic radiation-curable resins bearing ≥2 ethylenically unsatd. bonds, (B) ≥1 of N-substituted melamine compound organic acid salts, and guanamine compound organic acid salts, (C) photopolymn. initiators, (D) diluents, and (E) thermosetting compds. Preferably, the N-substituted melamine compound is represented by I [X1-X6 = H, (substituted) alkyl, (substituted) aromatic group ; not all of X1-X6 are H] and the guanamine compound is represented by II [Y =alkyl, (substituted) aromatic group]. The organic acids may be **carboxylic acids** HO2CR1 (R1 = H, alkyl, alkenyl, aromatic group), phosphoric acids HO(R3O)PO2R2 (R2, R3 = H, alkyl, alkenyl, aromatic group), and sulfonic acids R4SO3H (R4 = H, alkyl, alkenyl, aromatic group). Preferably, D comprises photopolymerizable monomers and/or organic solvents and E contains epoxies. The compds. can be developed by **UV** irradiation and aqueous alkalis, have long pot life, give cured layers free from ppts., and long pre-drying time for the composition-coated substrates.

IT **15625-89-5**, Trimethylolpropane triacrylate
RL: TEM (Technical or engineered material use); USES (Uses)
(neg. solder **resist** compns. containing organic acid salts of N-substituted melamines and guanamines for printed circuit boards)

RN 15625-89-5 HCAPLUS

CN 2-Propenoic acid, 2-ethyl-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester (9CI) (CA INDEX NAME)



IC ICM G03F007-004
ICS C08F299-00; C08G059-50; G03F007-027; G03F007-028; H05K003-28
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38, 76
ST neg photosensitive resin compn solder resist; melamine org acid salt **crosslinking** accelerator; guanamine org acid salt **crosslinking** accelerator; epoxy acrylate neg solder resist compn; latent thermosetting accelerator epoxy solder resist
IT **Crosslinking** catalysts
Printed circuit boards
(neg. solder resist compns. containing organic acid salts of N-substituted melamines and guanamines for printed circuit boards)
IT 85-43-8DP, Tetrahydrophthalic anhydride, **ester** with cresolic novolak epoxy resin acrylate
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(neg. solder resist compns. containing organic acid salts of N-substituted melamines and guanamines for printed circuit boards)
IT **15625-89-5**, Trimethylolpropane triacrylate 71868-10-5 108673-46-7
RL: TEM (Technical or engineered material use); USES (Uses)
(neg. solder **resist** compns. containing organic acid salts of N-substituted melamines and guanamines for printed circuit boards)

L41 ANSWER 3 OF 32 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:907050 HCAPLUS
DOCUMENT NUMBER: 138:9661
TITLE: **Cross-linking** monomers for photoresists and preparation of photoresist polymers

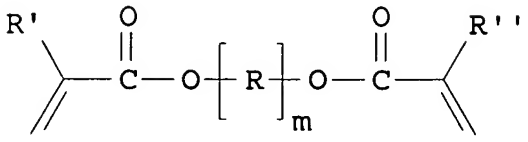
INVENTOR(S): Jung, Jae Chang; Kong, Keun Kyu; Jung, Min Ho; Lee, Geun Su; Baik, Ki Ho
PATENT ASSIGNEE(S): Hyundai Electronics Industries Co., Ltd., S. Korea
SOURCE: U.S. Pat. Appl. Publ., 10 pp., Cont.-in-part of U.S. Ser. No. 465,111, abandoned.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002177069	A1	20021128	US 2002-80507	20020222
KR 2000047041	A	20000725	KR 1998-63793	19981231

PRIORITY APPLN. INFO.:

KR 1998-63793	A	19981231
US 1999-465111	B2	19991216

GI



I

AB The present invention discloses a **crosslinking** monomer represented by the general formula I (R1, R2 = H, CH3; m = 1-10; R

= C1-10-alkyl, C1-10-**ester**, C1-10-**ketone**, C1-10-**carboxylic acid**, C1-10-**acetal**, C1-10 alkyl) and a process for preparing a photoresist polymer using the **crosslinking** monomer, and a photoresist polymer. The object of the present invention is to provide a **crosslinking** monomer for a photoresist polymer which can noticeably improve the polymerization yield of the photoresist polymer. Another object of the present invention is to provide a process for preparing a photoresist polymer using said **crosslinking** monomer, and a photoresist polymer.

IT **282529-66-2P 282529-67-3P**
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**crosslinking** monomers for **photoresists** and preparation of **photoresist** polymers)

RN 282529-66-2 HCAPLUS
CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, polymer with 1,1-dimethylethyl bicyclo[2.2.1]hept-5-ene-2-carboxylate, 2,5-furandione, 2-hydroxyethyl bicyclo[2.2.1]hept-5-ene-2-carboxylate and 1-methyl-1,3-propanediyl di-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 154970-45-3
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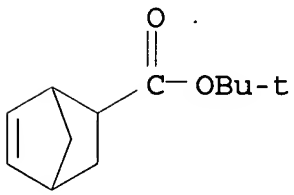

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CRN 37503-42-7
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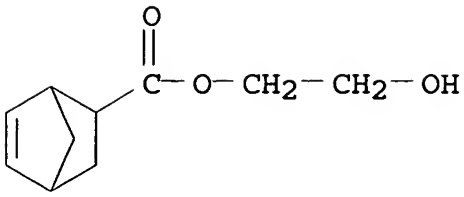

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CRN 19485-03-1
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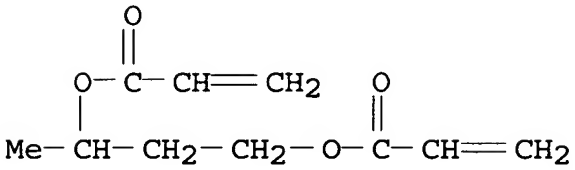

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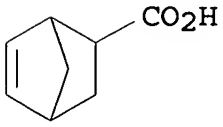

CM 5

CRN 108-31-6
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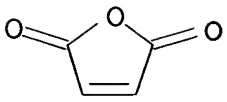

RN 282529-67-3 HCAPLUS
CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, polymer with 1,4-butanediyl di-2-propenoate, 1,1-dimethylethyl bicyclo[2.2.1]hept-5-ene-2-carboxylate, 2,5-furandione and 2-hydroxyethyl bicyclo[2.2.1]hept-5-ene-2-carboxylate (9CI) (CA INDEX NAME)

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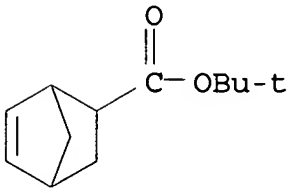
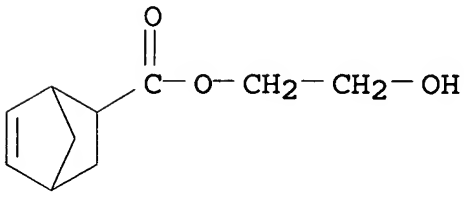
CRN 154970-45-3
CMF C12 H18 O2



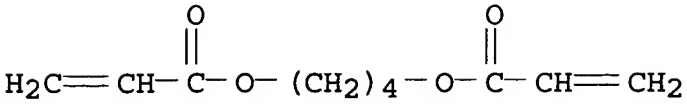
CM 2

CRN 37503-42-7
CMF C10 H14 O3



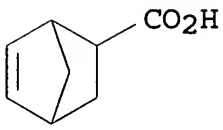
CM 3

CRN 1070-70-8
CMF C10 H14 O4



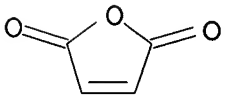
CM 4

CRN 120-74-1
CMF C8 H10 O2



CM 5

CRN 108-31-6
CMF C4 H2 O3



IC ICM G03F007-038
ICS G03F007-38; G03F007-40; G03F007-32; G03F007-30
INCL 430270100; 430910000; 430914000; 430325000; 430326000; 430319000; 560224000; 526272000; 526281000; 526323200
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38
ST photoresist **UV crosslinking** monomer copolymer prepn photolithog
IT Photolithography
Photoresists

(**UV**; **crosslinking** monomers for photoresists and preparation of photoresist polymers)

IT **282529-66-2P 282529-67-3P**
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**crosslinking** monomers for **photoresists** and preparation of **photoresist** polymers)

IT 75-59-2, Tetramethylammonium hydroxide
RL: TEM (Technical or engineered material use); USES (Uses)
(developer; **crosslinking** monomers for photoresists and preparation of photoresist polymers)

IT 66003-78-9, Triphenylsulfonium triflate
RL: TEM (Technical or engineered material use); USES (Uses)
(photoacid generator; **crosslinking** monomers for photoresists and preparation of photoresist polymers)

IT 78-67-1, 2,2'-Azobisisobutyronitrile
RL: CAT (Catalyst use); USES (Uses)
(photoinitiator; **crosslinking** monomers for photoresists and preparation of photoresist polymers)

IT 109-99-9, Tetrahydrofuran., uses
RL: NUU (Other use, unclassified); USES (Uses)
(polymerization solvent; **crosslinking** monomers for photoresists and preparation of photoresist polymers)

L41 ANSWER 4 OF 32 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:768024 HCAPLUS
DOCUMENT NUMBER: 137:303043
TITLE: Photosolder resist inks for forming permanent protective films on printed circuit boards
INVENTOR(S): Oshima, Maki; Hashimoto, Soichi
PATENT ASSIGNEE(S): Gooh Chemical Industry Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002294131	A2	20021009	JP 2001-101014	2001 0330

PRIORITY APPLN. INFO.: JP 2001-101014

2001
0330

AB The resist inks having good photo-sensitivity and resolution, comprise (A) **UV**-curable resins bearing ethylenically unsatd. pendants and COOH pendants, (B) photoinitiators and (C) black pigments having reflection regions at a wavelength range higher than 500 nm for improving photo-curability of inks without wasting radiation by non-**crosslinking** absorption. Thus, heating a Blemmer GS (glycidyl methacrylate)-Me methacrylate copolymer with acrylic acid in THF in the presence hydroquinone and dimethylbenzylamine at 100° for 24 h, then with tetrahydrophthalic anhydride in carbitol acetate gave a **UV** -curable resin (A), 50 parts of which was combined with Epiclon N 680 (cresol novolak epoxy resin) 10, Paliogen Black S 0084 (black pigment)1, Irgacure 907 (photoinitiator) 4, Kayacure DETX-S (initiator) 0.5, Modaflow 1, silica 10, Ba sulfate 20, melamine 1 and dipentaerythritol hexaacrylate 7 parts to give a photosolder resist ink with good curability and resolution

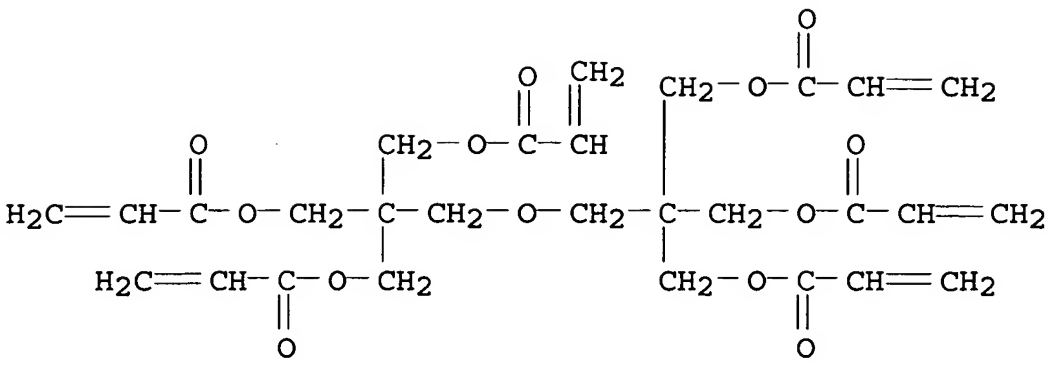
IT **468719-48-4P**, Glycidyl methacrylate-methyl methacrylate copolymer acrylate tetrahydrophthalate **ester**, copolymer with dipentaerythritol hexaacrylate **468719-50-8P**, Epiclon N 680 acrylate tetrahydrophthalate **ester**, copolymer with dipentaerythritol hexaacrylate
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**UV**-curable resin; in manufacture of photosolder **resist** inks for forming permanent protective films on printed circuit boards)

RN 468719-48-4 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with oxiranylmethyl 2-methyl-2-propenoate, hydrogen 4-cyclohexene-1,2-dicarboxylate 2-propenoate, polymer with 2-[[3-[(1-oxo-2-propenyl)oxy]-2,2-bis[[(1-oxo-2-propenyl)oxy]methyl]propoxy]methyl]-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl di-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 29570-58-9
CMF C28 H34 O13

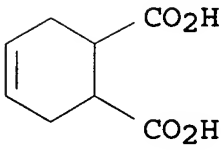


CM 2

CRN 163658-81-9
CMF C8 H10 O4 . x (C7 H10 O3 . C5 H8 O2)x . x C3 H4 O2

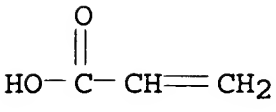
CM 3

CRN 88-98-2
CMF C8 H10 O4



CM 4

CRN 79-10-7
CMF C3 H4 O2

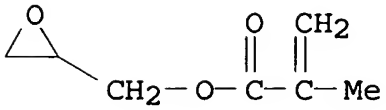


CM 5

CRN 26141-88-8
CMF (C7 H10 O3 . C5 H8 O2)x
CCI PMS

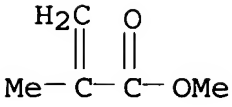
CM 6

CRN 106-91-2
CMF C7 H10 O3



CM 7

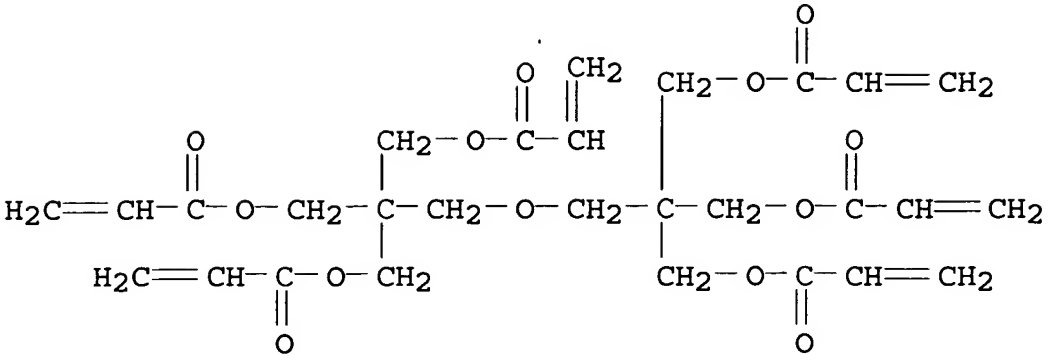
CRN 80-62-6
CMF C5 H8 O2



RN 468719-50-8 HCAPLUS
CN 2-Propenoic acid, 2-[[3-[(1-oxo-2-propenyl)oxy]-2,2-bis[[(1-oxo-2-propenyl)oxy]methyl]propoxy]methyl]-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester, polymer with Epiclon N 680 homopolymer hydrogen 4-cyclohexene-1,2-dicarboxylate 2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 29570-58-9
CMF C28 H34 O13

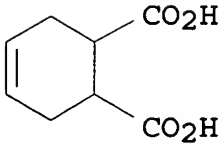


CM 2

CRN 468719-49-5
CMF C8 H10 O4 . x C3 H4 O2 . x (Unspecified)x

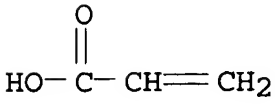
CM 3

CRN 88-98-2
CMF C8 H10 O4



CM 4

CRN 79-10-7
CMF C3 H4 O2



CM 5

CRN 171183-16-7
CMF (Unspecified)x
CCI PMS

CM 6

CRN 87912-85-4
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IC ICM C09D011-10
ICS C08F290-08; C08F299-00; C08G059-18; G03F007-004; G03F007-038; H05K003-28
CC 76-2 (Electric Phenomena)
ST acrylic epoxy resin **UV** curable photosolder resist ink manuf
IT **468719-48-4P**, Glycidyl methacrylate-methyl methacrylate copolymer acrylate tetrahydrophthalate **ester**, copolymer with dipentaerythritol hexaacrylate **468719-50-8P**, Epiclon N 680 acrylate tetrahydrophthalate **ester**, copolymer with dipentaerythritol hexaacrylate
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**UV**-curable resin; in manufacture of photosolder **resist** inks for forming permanent protective films on printed circuit boards)

L41 ANSWER 5 OF 32 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:650043 HCAPLUS
DOCUMENT NUMBER: 137:192766
TITLE: Epoxy carboxylates and their use in photosensitive polymer compositions for solder resists in printed circuits
INVENTOR(S): Koyanagi, Takao
PATENT ASSIGNEE(S): Nippon Kayaku Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002241467	A2	20020828	JP 2001-37986	2001 0215

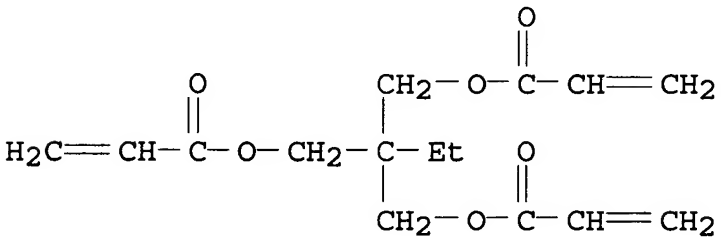
PRIORITY APPLN. INFO.: JP 2001-37986 2001 0215

AB The carboxylates are obtained by reacting ≥2 epoxy-containing epoxy compds. with heterocyclic structure-containing monocarboxylic acid compds. and ethylenically unsatd. double bond-containing monocarboxylic acid compds. The photosensitive polymer compns. contain the carboxylates, photopolymn. initiators, and optionally **crosslinking** agents. Cured products of the compns. and substrates having the cured product layers are also claimed. The compns. show high **UV**-sensitivity and give cured products with high adhesion, pencil hardness, resistance to solvents, acids, heat, plating, etc.

IT **15625-89-5**, TMPTA
RL: TEM (Technical or engineered material use); USES (Uses)
(epoxy carboxylates and their use in photosensitive polymer compns. for solder **resists** in printed circuits)

RN 15625-89-5 HCAPLUS

CN 2-Propenoic acid, 2-ethyl-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester (9CI) (CA INDEX NAME)



IC ICM C08G059-16
ICS C08F290-06; C08G059-20; G03F007-027; H05K003-28

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 37, 76

IT Epoxy resins, preparation
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**esters**; epoxy carboxylates and their use in photosensitive polymer compns. for solder resists in printed circuits)

IT **15625-89-5**, TMPTA 93294-97-4, DPCA 60
RL: TEM (Technical or engineered material use); USES (Uses)
(epoxy carboxylates and their use in photosensitive polymer compns. for solder **resists** in printed circuits)

L41 ANSWER 6 OF 32 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:636513 HCAPLUS
DOCUMENT NUMBER: 137:192755
TITLE: Aqueous alkaline solution-soluble epoxy carboxylates, their use in photosensitive polymer compositions, and their cured products
INVENTOR(S): Koyanagi, Takao
PATENT ASSIGNEE(S): Nippon Kayaku Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002234932	A2	20020823	JP 2001-34002	2001 0209
PRIORITY APPLN. INFO.:			JP 2001-34002	2001 0209

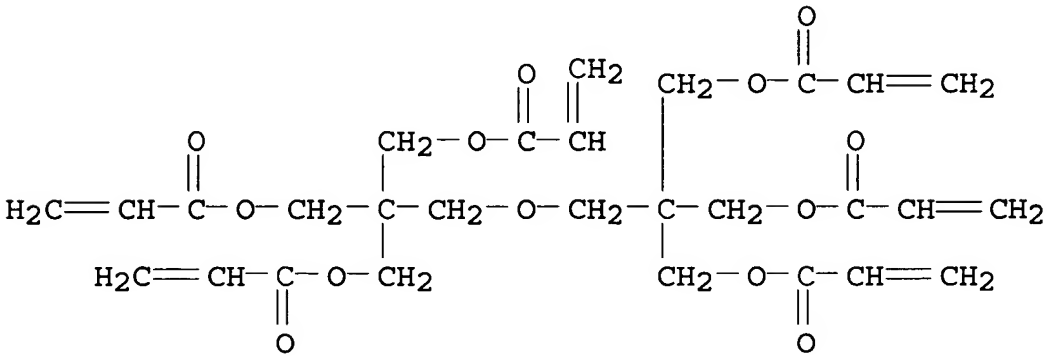
AB The carboxylates are obtained by reacting ≥2 epoxy-containing epoxy compds. with heterocyclic structure-containing monocarboxylic acid compds. and ethylenically unsatd. double bond-containing monocarboxylic acid compds. and then reacting the resulting compds. with polybasic acid anhydrides. The photosensitive polymer compns. contain the carboxylates, photopolymn. initiators, **crosslinking** agents, and optionally curable components. The compns. show high **UV**-sensitivity, give cured products with high adhesion, pencil hardness, resistance to

solvents, acid, heat, plating, etc., and are suitable for solder resists in printed circuits.

IT **29570-58-9**, DPHA
RL: TEM (Technical or engineered material use); USES (Uses)
(aqueous alkaline solution-soluble epoxy carboxylates and their photosensitive polymer compns. for solder **resists**)

RN 29570-58-9 HCAPLUS

CN 2-Propenoic acid, 2-[[3-[(1-oxo-2-propenyl)oxy]-2,2-bis[[(1-oxo-2-propenyl)oxy]methyl]propoxy]methyl]-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester (9CI) (CA INDEX NAME)



IC ICM C08G059-14
ICS C08G059-20; G03F007-027; H05K003-18; H05K003-28; H05K003-46

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 37, 76

IT Epoxy resins, preparation
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**esters**; aqueous alkaline solution-soluble epoxy carboxylates and their photosensitive polymer compns. for solder resists)

IT 28825-96-9, TEPIC **29570-58-9**, DPHA 89118-70-7, YX 4000 93294-97-4, DPCA 60 104841-49-8, EOCN 1020 450336-22-8, NC 3000S
RL: TEM (Technical or engineered material use); USES (Uses)
(aqueous alkaline solution-soluble epoxy carboxylates and their photosensitive polymer compns. for solder **resists**)

L41 ANSWER 7 OF 32 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:465593 HCAPLUS
DOCUMENT NUMBER: 137:54619

TITLE: Manufacture of energy ray-curable epoxy resin acrylates by using reduced amounts of or without using halogen-containing catalysts and their resin compositions for solder resists
INVENTOR(S): Ichinose, Hidetoshi; Yamashina, Hirozo; Ishikawa, Hidenobu
PATENT ASSIGNEE(S): Dainippon Ink and Chemicals, Inc., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 16 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002173518	A2	20020621	JP 2001-281040	2001 0917
PRIORITY APPLN. INFO.:			JP 2000-296512 A	2000 0928

AB The energy ray-curable resins (I) are prepared by reacting (A) HO-containing modified epoxy acrylates prepared by a reaction catalyzed by, preferably nonhalogen or phosphine-based catalysts, (a1) bifunctional epoxy resins, (a2) monocarboxylic acids bearing (meth)acryloyl groups, and (a3) dicarboxylic acids involving those bearing (meth)acryloyl groups at a ratio satisfying 0.9na1 < na2 + na3 <1.1na1 and 0.2 < na2/na3 < 4.0 (na1 = molar number of total epoxy groups in a1; na2, na3 = molar nos. of total CO2H in a2 and a3, resp.) and (B) acid anhydrides. The compns. containing the resins I and epoxy compds. (II) show high sensitivity to **UV**, electron beam, etc., are developable with aqueous alkalis, offers cured films having high heat resistance, hardness, elongation, elec. properties, and are useful for permanent protection masks such as solder resists for printed circuits, etc.

IT **438210-71-0P 438210-72-1P 438210-73-2P 438210-74-3P 438238-74-5P**
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**crosslinked**; manufacture of energy ray-curable epoxy resin acrylates without using halogen-containing catalysts for

solder **resist** compns.)

RN 438210-71-0 HCAPLUS

CN 2-Propenoic acid, 2-[[3-[(1-oxo-2-propenyl)oxy]-2,2-bis[[(1-oxo-2-propenyl)oxy]methyl]propoxy]methyl]-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester, polymer with (chloromethyl)oxirane polymer with 4,4'-(1-methylethylidene)bis[phenol] ester with 2-[(1-oxo-2-propenyl)oxy]ethyl dihydrogen 1,2,4-benzenetricarboxylate hydrogen 1,3-benzenedicarboxylate hydrogen 4-cyclohexene-1,2-dicarboxylate 2-propenoate, and EE 214 (9CI) (CA INDEX NAME)

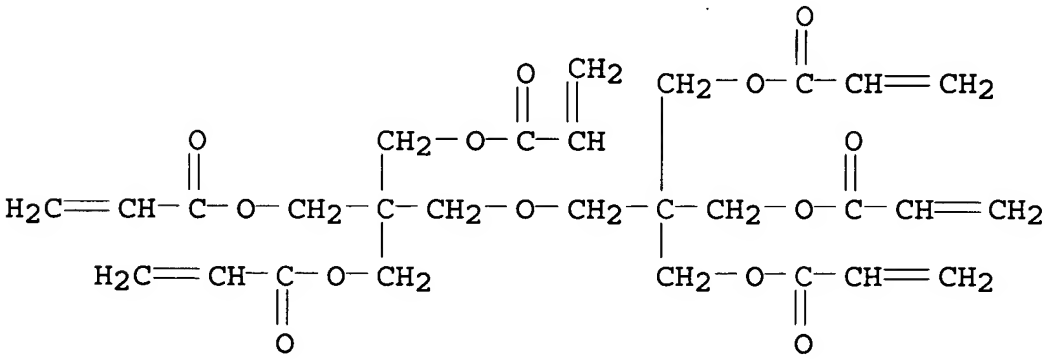
CM 1

CRN 412044-75-8
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 29570-58-9
CMF C28 H34 O13

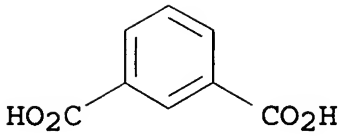


CM 3

CRN 438210-64-1
CMF (C15 H16 O2 . C3 H5 Cl O)x . x C14 H12 O8 . x C8 H10 O4 . x C8 H6 O4 . x C3 H4 O2

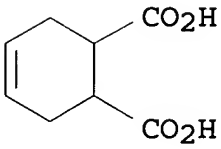
CM 4

CRN 121-91-5
CMF C8 H6 O4



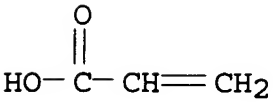
CM 5

CRN 88-98-2
CMF C8 H10 O4



CM 6

CRN 79-10-7
CMF C3 H4 O2

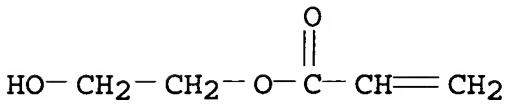


CM 7

CRN 438210-63-0
CMF C14 H12 O8
CCI IDS

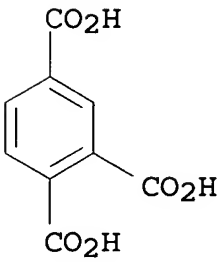
CM 8

CRN 818-61-1
CMF C5 H8 O3



CM 9

CRN 528-44-9
CMF C9 H6 O6

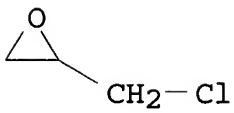


CM 10

CRN 25068-38-6
CMF (C15 H16 O2 . C3 H5 Cl O)x
CCI PMS

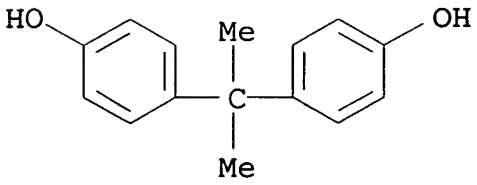
CM 11

CRN 106-89-8
CMF C3 H5 Cl O



CM 12

CRN 80-05-7
CMF C15 H16 O2



RN 438210-72-1 HCAPLUS
CN 2-Propenoic acid, 2-[[3-[(1-oxo-2-propenyl)oxy]-2,2-bis[[(1-oxo-2-propenyl)oxy]methyl]propoxy]methyl]-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester, polymer with (chloromethyl)oxirane polymer with 4,4'-(1-methylethylidene)bis[phenol] hydrogen 1,3-benzenedicarboxylate hydrogen 1,4-benzenedicarboxylate hydrogen 4-cyclohexene-1,2-dicarboxylate 3-[(1-oxo-2-propenyl)oxy]-2,2-bis[[(1-oxo-2-propenyl)oxy]methyl]propyl dihydrogen 1,2,4-benzenetricarboxylate 2-propenoate, and EE 214 (9CI) (CA INDEX NAME)

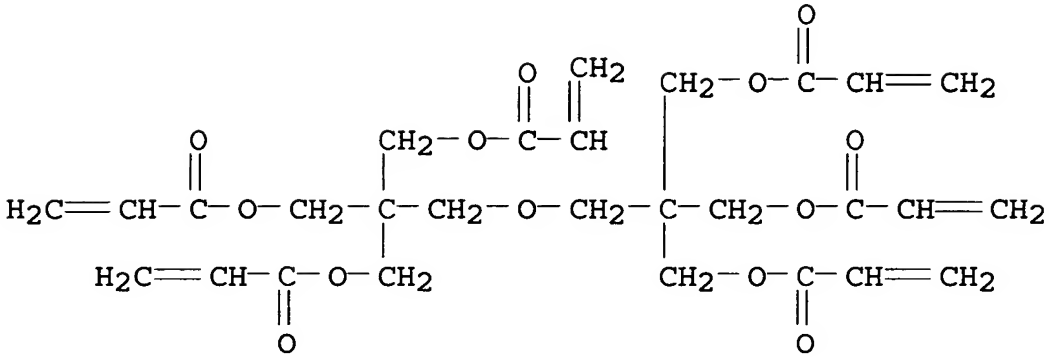
CM 1

CRN 412044-75-8
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 29570-58-9
CMF C28 H34 O13

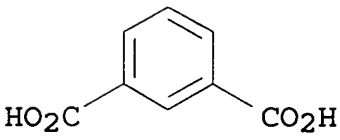


CM 3

CRN 438210-66-3
CMF C23 H22 O12 . x (C15 H16 O2 . C3 H5 Cl O)x . x C8 H10 O4 . x C8 H6 O4 . x C8 H6 O4 . x C3 H4 O2

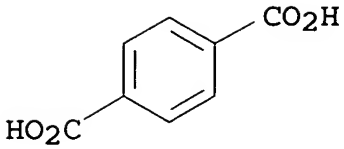
CM 4

CRN 121-91-5
CMF C8 H6 O4



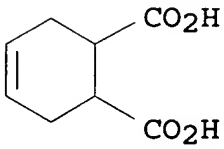
CM 5

CRN 100-21-0
CMF C8 H6 O4



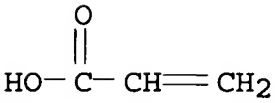
CM 6

CRN 88-98-2
CMF C8 H10 O4



CM 7

CRN 79-10-7
CMF C3 H4 O2

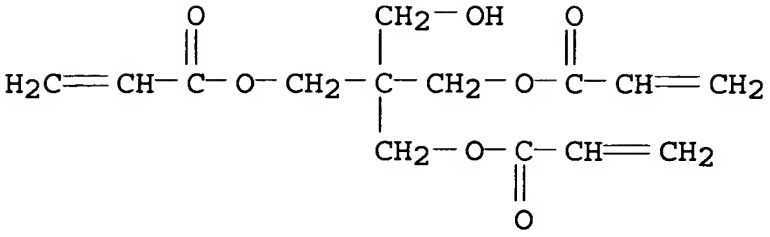


CM 8

CRN 438210-65-2
CMF C23 H22 O12
CCI IDS

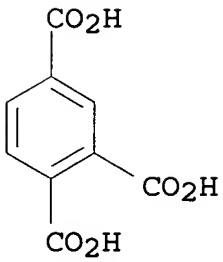
CM 9

CRN 3524-68-3
CMF C14 H18 O7



CM 10

CRN 528-44-9
CMF C9 H6 O6

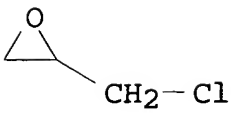


CM 11

CRN 25068-38-6
CMF (C15 H16 O2 . C3 H5 Cl O)x
CCI PMS

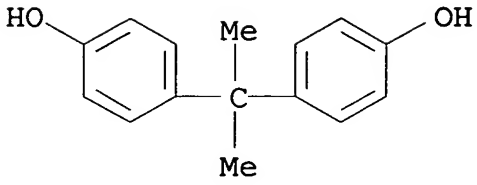
CM 12

CRN 106-89-8
CMF C3 H5 Cl O



CM 13

CRN 80-05-7
CMF C15 H16 O2



RN 438210-73-2 HCAPLUS
CN 2-Propenoic acid, 2-[[3-[(1-oxo-2-propenyl)oxy]-2,2-bis[[(1-oxo-2-propenyl)oxy]methyl]propoxy]methyl]-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester, polymer with EE 214 and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis[oxirane] homopolymer hydrogen 4-cyclohexene-1,2-dicarboxylate 3-[(1-oxo-2-propenyl)oxy]-2,2-bis[[(1-oxo-2-propenyl)oxy]methyl]propyl dihydrogen 1,2,4-benzenetricarboxylate 2-propenoate (9CI) (CA INDEX NAME)

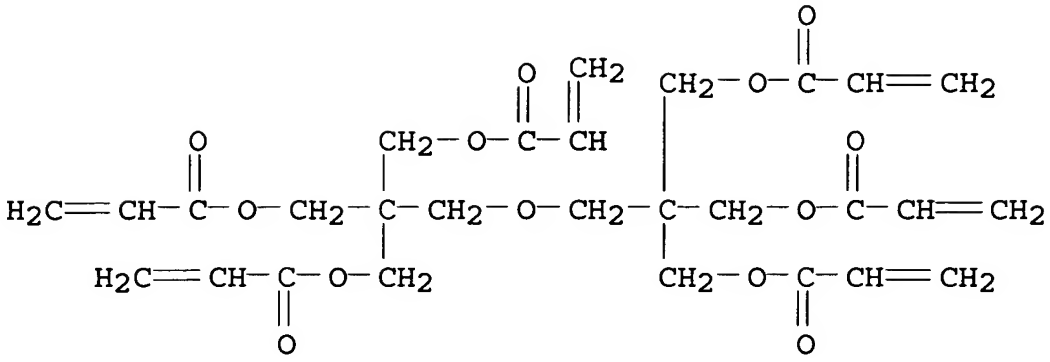
CM 1

CRN 412044-75-8
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 29570-58-9
CMF C28 H34 O13

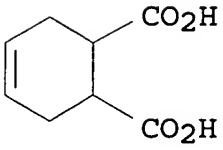


CM 3

CRN 438210-67-4
CMF C23 H22 O12 . x (C19 H20 O4)x . x C8 H10 O4 . x C3 H4 O2

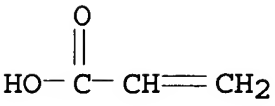
CM 4

CRN 88-98-2
CMF C8 H10 O4



CM 5

CRN 79-10-7
CMF C3 H4 O2

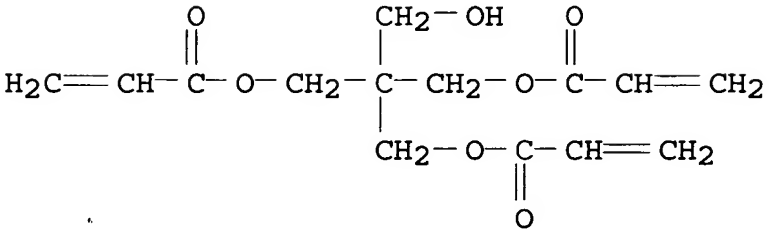


CM 6

CRN 438210-65-2
CMF C23 H22 O12
CCI IDS

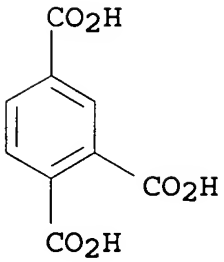
CM 7

CRN 3524-68-3
CMF C14 H18 O7



CM 8

CRN 528-44-9
CMF C9 H6 O6

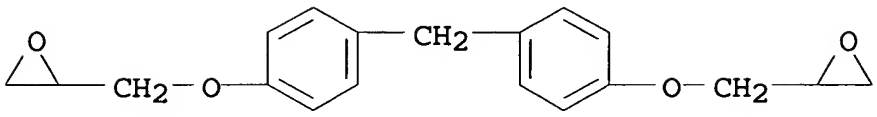


CM 9

CRN 65581-98-8
CMF (C19 H20 O4)x
CCI PMS

CM 10

CRN 2095-03-6
CMF C19 H20 O4



RN 438210-74-3 HCAPLUS
CN 2-Propenoic acid, 2-[[3-[(1-oxo-2-propenyl)oxy]-2,2-bis[[(1-oxo-2-propenyl)oxy]methyl]propoxy]methyl]-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester, polymer with (chloromethyl)oxirane polymer with 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis[oxirane] and 3,3',5,5'-tetramethyl[1,1'-biphenyl]-4,4'-diol hydrogen 1,3-benzenedicarboxylate hydrogen butanedioate 2-[(1-oxo-2-propenyl)oxy]ethyl hydrogen 1,3-dihydro-1,3-dioxo-5,6-isobenzofurandicarboxylate 2-propenoate, and EE 214 (9CI) (CA INDEX NAME)

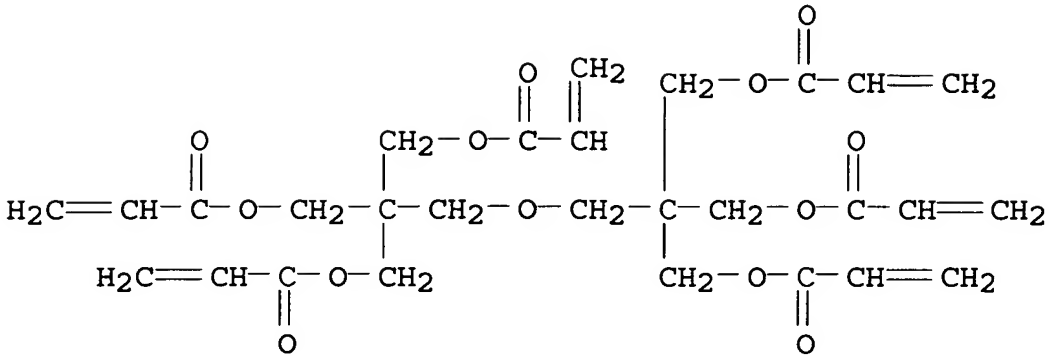
CM 1

CRN 412044-75-8
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 29570-58-9
CMF C28 H34 O13

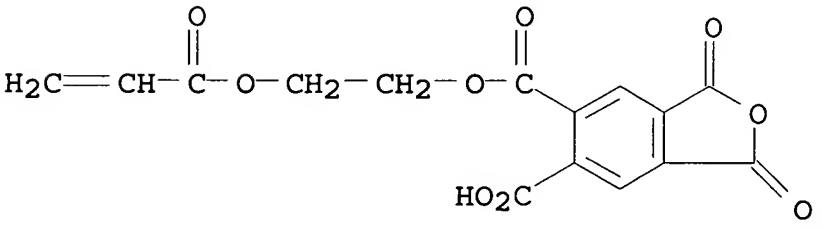


CM 3

CRN 438210-69-6
CMF (C19 H20 O4 . C16 H18 O2 . C3 H5 Cl O)x . x C15 H10 O9 . x C8 H6 O4 . x C4 H6 O4 . x C3 H4 O2

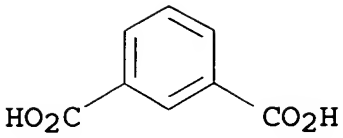
CM 4

CRN 103831-52-3
CMF C15 H10 O9



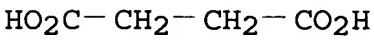
CM 5

CRN 121-91-5
CMF C8 H6 O4



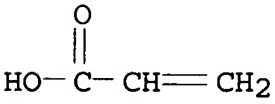
CM 6

CRN 110-15-6
CMF C4 H6 O4



CM 7

CRN 79-10-7
CMF C3 H4 O2

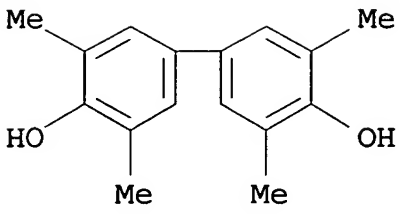


CM 8

CRN 438210-68-5
CMF (C19 H20 O4 . C16 H18 O2 . C3 H5 Cl O)x
CCI PMS

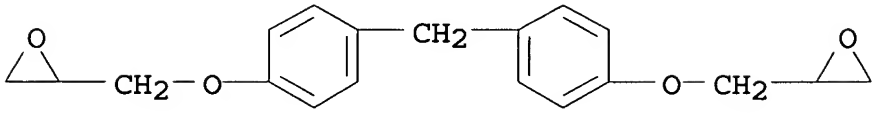
CM 9

CRN 2417-04-1
CMF C16 H18 O2



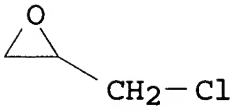
CM 10

CRN 2095-03-6
CMF C19 H20 O4



CM 11

CRN 106-89-8
CMF C3 H5 Cl O



RN 438238-74-5 HCAPLUS
CN 2-Propenoic acid, 2-[[3-[(1-oxo-2-propenyl)oxy]-2,2-bis[[(1-oxo-2-propenyl)oxy]methyl]propoxy]methyl]-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester, polymer with EE 214 and 2,2'-[(1-methylethylidene)bis(4,1-cyclohexanediyloxymethylene)]bis[oxirane] homopolymer hydrogen cyclohexanedicarboxylate hydrogen 4-cyclohexene-1,2-dicarboxylate 3-[(1-oxo-2-propenyl)oxy]-2,2-bis[[(1-oxo-2-propenyl)oxy]methyl]propyl dihydrogen 1,2,4-benzenetricarboxylate 2-propenoate (9CI) (CA INDEX NAME)

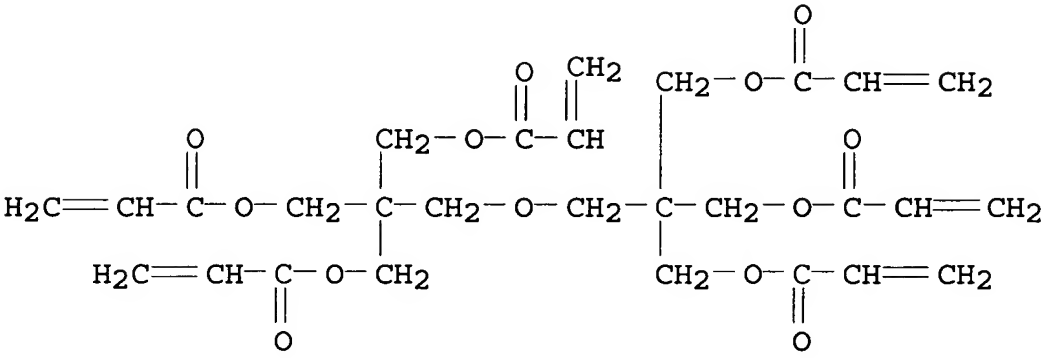
CM 1

CRN 412044-75-8
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 29570-58-9
CMF C28 H34 O13

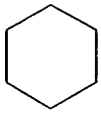


CM 3

CRN 438210-70-9
CMF C23 H22 O12 . x (C21 H36 O4)x . x C8 H12 O4 . x C8 H10 O4 . x C3 H4 O2

CM 4

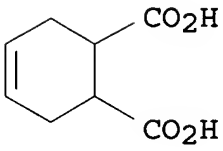
CRN 31290-91-2
CMF C8 H12 O4
CCI IDS



2 [D1—CO_2H]

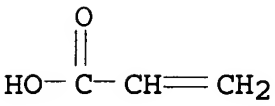
CM 5

CRN 88-98-2
CMF C8 H10 O4



CM 6

CRN 79-10-7
CMF C3 H4 O2

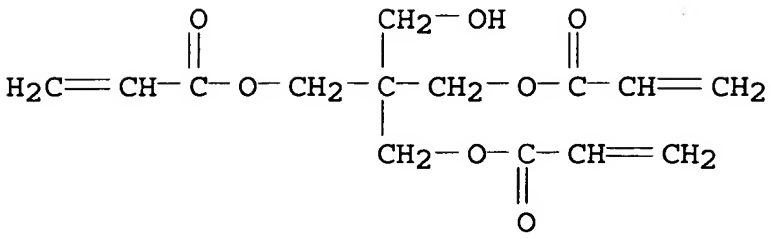


CM 7

CRN 438210-65-2
CMF C23 H22 O12
CCI IDS

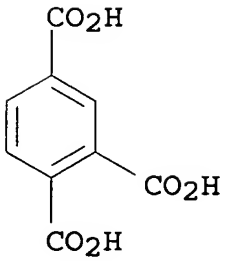
CM 8

CRN 3524-68-3
CMF C14 H18 O7



CM 9

CRN 528-44-9
CMF C9 H6 O6

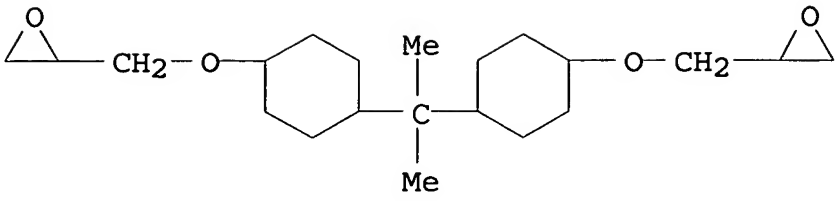


CM 10

CRN 26283-70-5
CMF (C21 H36 O4)x
CCI PMS

CM 11

CRN 13410-58-7
CMF C21 H36 O4



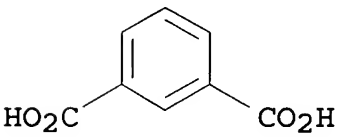
IT **438210-66-3P 438210-67-4P 438210-70-9P**
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(manufacture of energy ray-curable epoxy resin acrylates without using halogen-containing catalysts for solder **resist** compns.)

RN 438210-66-3 HCAPLUS

CN Phenol, 4,4'-(1-methylethylidene)bis-, polymer with (chloromethyl)oxirane, hydrogen 1,3-benzenedicarboxylate, hydrogen 1,4-benzenedicarboxylate, hydrogen 4-cyclohexene-1,2-dicarboxylate, 3-[(1-oxo-2-propenyl)oxy]-2,2-bis[[(1-oxo-2-propenyl)oxy]methyl]propyl dihydrogen 1,2,4-benzenetricarboxylate, 2-propenoate (9CI) (CA INDEX NAME)

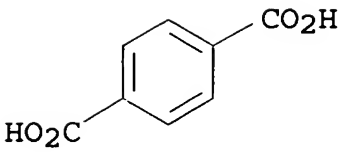
CM 1

CRN 121-91-5
CMF C8 H6 O4



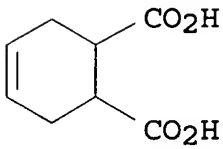
CM 2

CRN 100-21-0
CMF C8 H6 O4



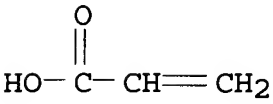
CM 3

CRN 88-98-2
CMF C8 H10 O4



CM 4

CRN 79-10-7
CMF C3 H4 O2

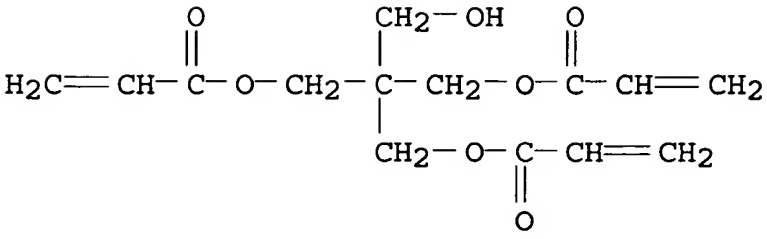


CM 5

CRN 438210-65-2
CMF C23 H22 O12
CCI IDS

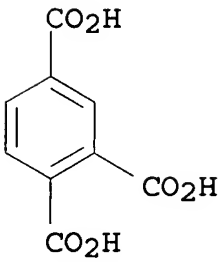
CM 6

CRN 3524-68-3
CMF C14 H18 O7



CM 7

CRN 528-44-9
CMF C9 H6 O6

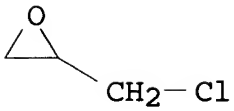


CM 8

CRN 25068-38-6
CMF (C15 H16 O2 . C3 H5 Cl O)x
CCI PMS

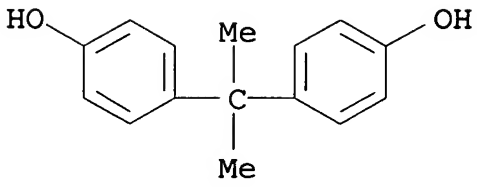
CM 9

CRN 106-89-8
CMF C3 H5 Cl O



CM 10

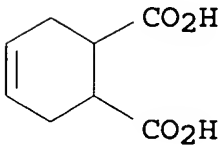
CRN 80-05-7
CMF C15 H16 O2



RN 438210-67-4 HCAPLUS
CN Oxirane, 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis-, homopolymer, hydrogen 4-cyclohexene-1,2-dicarboxylate, 3-[(1-oxo-2-propenyl)oxy]-2,2-bis[[(1-oxo-2-propenyl)oxy]methyl]propyl dihydrogen 1,2,4-benzenetricarboxylate, 2-propenoate (9CI) (CA INDEX NAME)

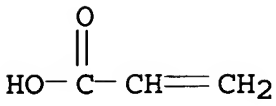
CM 1

CRN 88-98-2
CMF C8 H10 O4



CM 2

CRN 79-10-7
CMF C3 H4 O2

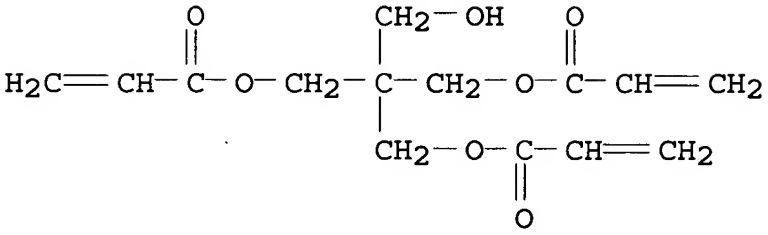


CM 3

CRN 438210-65-2
CMF C23 H22 O12
CCI IDS

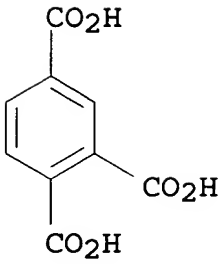
CM 4

CRN 3524-68-3
CMF C14 H18 O7



CM 5

CRN 528-44-9
CMF C9 H6 O6

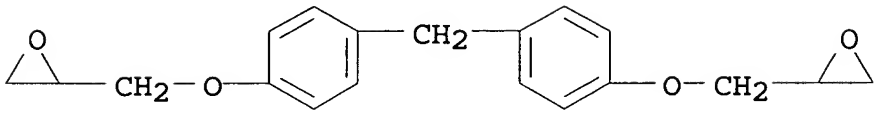


CM 6

CRN 65581-98-8
CMF (C19 H20 O4)x
CCI PMS

CM 7

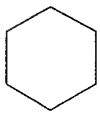
CRN 2095-03-6
CMF C19 H20 O4

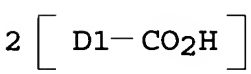


RN 438210-70-9 HCAPLUS
CN Oxirane, 2,2'-[(1-methylethylidene)bis(4,1-cyclohexanediyloxymethylene)]bis-, homopolymer, hydrogen cyclohexanedicarboxylate, hydrogen 4-cyclohexene-1,2-dicarboxylate, 3-[(1-oxo-2-propenyl)oxy]-2,2-bis[[(1-oxo-2-propenyl)oxy]methyl]propyl dihydrogen 1,2,4-benzenetricarboxylate, 2-propenoate (9CI) (CA INDEX NAME)

CM 1

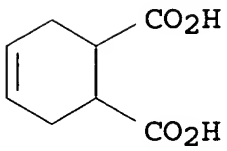
CRN 31290-91-2
CMF C8 H12 O4
CCI IDS





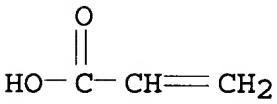
CM 2

CRN 88-98-2
CMF C8 H10 O4



CM 3

CRN 79-10-7
CMF C3 H4 O2

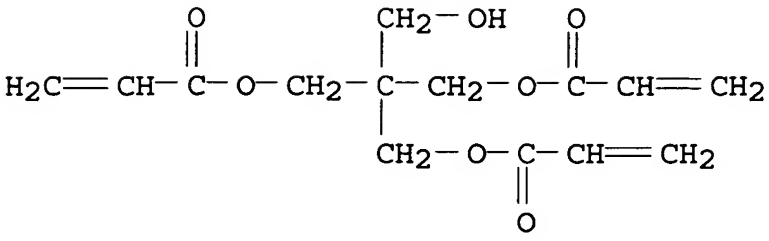


CM 4

CRN 438210-65-2
CMF C23 H22 O12
CCI IDS

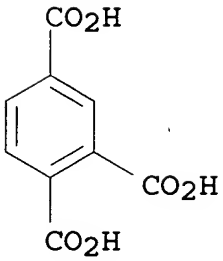
CM 5

CRN 3524-68-3
CMF C14 H18 O7



CM 6

CRN 528-44-9
CMF C9 H6 O6

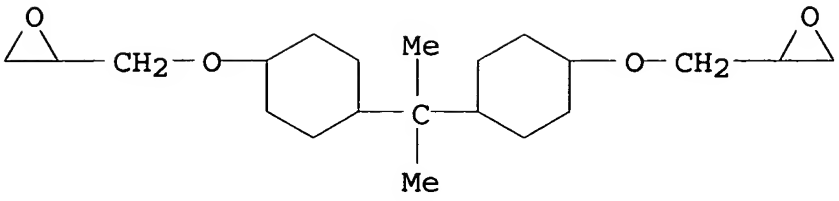


CM 7

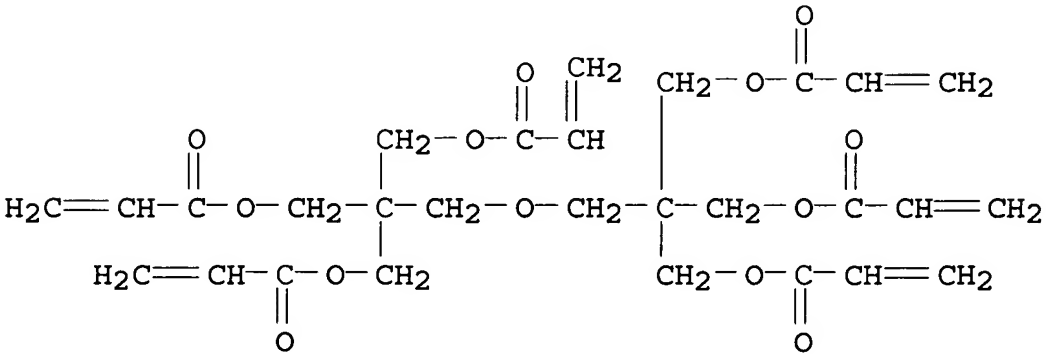
CRN 26283-70-5
CMF (C21 H36 O4)x
CCI PMS

CM 8

CRN 13410-58-7
CMF C21 H36 O4



IT **29570-58-9**, Dipentaerythritol hexaacrylate
RL: RCT (Reactant); RACT (Reactant or reagent)
(manufacture of energy ray-curable epoxy resin acrylates without using halogen-containing catalysts for solder **resist** compns.)
RN 29570-58-9 HCAPLUS
CN 2-Propenoic acid, 2-[[3-[(1-oxo-2-propenyl)oxy]-2,2-bis[[(1-oxo-2-propenyl)oxy]methyl]propoxy]methyl]-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester (9CI) (CA INDEX NAME)



IC ICM C08G059-17
ICS C08G059-58; C08G059-68
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38
ST energy ray curable epoxy resin acrylate; acid anhydride hydroxy epoxy acrylate reaction; solder resist vinyl **ester** resin curability; halogen free catalyst epoxy acrylate prepn; phosphine catalyzed epoxy acrylate prepn resist
IT **438210-71-0P 438210-72-1P 438210-73-2P 438210-74-3P 438238-74-5P**
RL: IMF (Industrial manufacture); TEM (Technical or engineered

material use); PREP (Preparation); USES (Uses)
(**crosslinked**; manufacture of energy ray-curable epoxy resin acrylates without using halogen-containing catalysts for solder **resist** compns.)

IT 438210-64-1P **438210-66-3P 438210-67-4P**
438210-69-6P **438210-70-9P**
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(manufacture of energy ray-curable epoxy resin acrylates without using halogen-containing catalysts for solder **resist** compns.)

IT **29570-58-9**, Dipentaerythritol hexaacrylate 412044-75-8, EE 214
RL: RCT (Reactant); RACT (Reactant or reagent)
(manufacture of energy ray-curable epoxy resin acrylates without using halogen-containing catalysts for solder **resist** compns.)

L41 ANSWER 8 OF 32 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:171832 HCAPLUS
DOCUMENT NUMBER: 136:233005
TITLE: Oxetane-modified compounds and photocuring compounds derived therefrom, processes for preparation of both and curing compositions containing the photocuring compounds
INVENTOR(S): Nishikubo, Tadatomi; Kameyama, Atsushi; Miyabe, Hidekazu; Sasaki, Masaki; Kusama, Masatoshi
PATENT ASSIGNEE(S): Kanagawa University, Japan; Taiyo Ink Manufacturing Co., Ltd.
SOURCE: PCT Int. Appl., 54 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002018313	A1	20020307	WO 2001-JP7222	2001 0823

W: CA, CN, IN, JP, KR, SG, US, VN
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU,

MC, NL, PT, SE, TR
PRIORITY APPLN. INFO.: JP 2000-260798 A 2000 0830

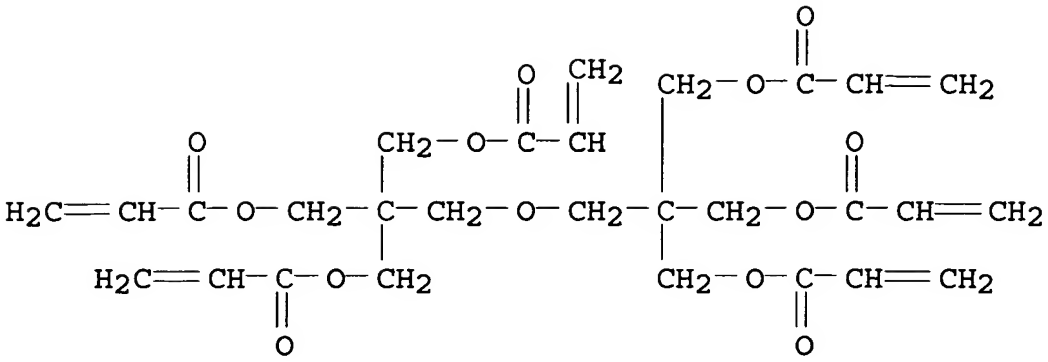
OTHER SOURCE(S): MARPAT 136:233005

AB Oxetane-modified compds. can be prepared in extremely high yield by reacting a compound (a) having a phenolic **hydroxyl group** with a monofunctional oxetane compound (b) having a primary **hydroxyl group** in the presence of at least one catalyst (c) selected from the group consisting of alkali metal alkoxides, alkali metal phenoxides, alkali metal carboxylates, crown ether complexes of these alkali metal compds., metal hydroxides and metal hydrides. The obtained oxetane-modified compds. give photocuring compds. via reactions with ethylenically unsatd. compds. (d) having hydroxyl-reactive functional groups, and these photocuring compds. give alkali-soluble photocuring compds. via reactions with polybasic acid anhydrides (e). The photocuring compds. are useful as the photocuring component of photosetting compns. or photo- and thermo-setting compns. for resist patterning of printed circuit boards, etc. Thus, mixing 3-ethyl-3-hydroxymethyloxetane 34.8 with a solution of p-cresol 10.8, 18-crown-6-ether 2.6 and K tert-butoxide 1.2 g in N-methyl-2-pyrrolidone 30 mL at 160° for 12 h gave p-cresyl 2,2-dimethylol-1-Bu ether. Mixing the ether 5.6 with NaOH 1.0 and Me methacrylate 50.0 at room temperature for 4 h and working up gave a methacrylate **ester** 25 parts of which was combined with Irgacure 184 (photoinitiator) 5 parts, coated on a Cu plate and irradiated with **UV** light to give tack-free coat film with good resistance to acetone.

IT **29570-58-9**, Dipentaerythritol hexaacrylate
RL: MOA (Modifier or additive use); USES (Uses)
(**crosslinker**; photocurable oxetane-modified compds. and their manufacture and use in **photoresists** for patterning of printed circuit boards)

RN 29570-58-9 HCAPLUS

CN 2-Propenoic acid, 2-[[3-[(1-oxo-2-propenyl)oxy]-2,2-bis[[(1-oxo-2-propenyl)oxy]methyl]propoxy]methyl]-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester (9CI) (CA INDEX NAME)



IC ICM C07C043-23
ICS C08F008-00; C08F020-30; C08F012-14; C08G008-28; C08G077-38; C07B061-00

CC 37-3 (Plastics Manufacture and Processing)
Section cross-reference(s): 74, 76

IT **Carboxylic acids**, uses
RL: CAT (Catalyst use); USES (Uses)
(alkali metal salts, etherification catalysts; photocurable oxetane-modified compds. and their manufacture and use in photoresists for patterning of printed circuit boards)

IT **Crosslinking**
(radiochem.; photocurable oxetane-modified compds. and their manufacture and use in photoresists for patterning of printed circuit boards)

IT 85-43-8DP, Tetrahydrophthalic anhydride, reaction products with polyhydroxystyrene methacrylate and Me methacrylate, **crosslinked** 24979-70-2DP, Poly(p-hydroxystyrene), oxetane-modified, reaction products with Me methacrylate and tetrahydrophthalic anhydride
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(alkali-soluble; photocurable oxetane-modified compds. and their manufacture and use in photoresists for patterning of printed circuit boards)

IT 28825-96-9, TEPIC **29570-58-9**, Dipentaerythritol hexaacrylate
RL: MOA (Modifier or additive use); USES (Uses)
(**crosslinker**; photocurable oxetane-modified compds. and their manufacture and use in **photoresists** for patterning of printed circuit boards)

IT 80-62-6DP, Methyl methacrylate, reaction products with

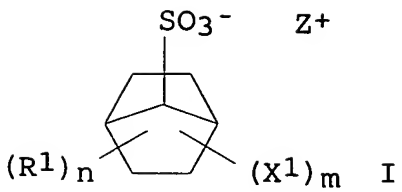
oxetane-modified phenolic hydroxy compds. and other unsatd. compds. 3047-32-3DP, 3-Ethyl-3-hydroxymethyloxetane, reaction products with phenolic hydroxy compds. and **crosslinkable** modifiers 9016-83-5DP, Cresol-formaldehyde copolymer, oxetane-modified, reaction products with photocurable modifiers 402832-37-5P
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(photocurable oxetane-modified compds. and their manufacture and use
in photoresists for patterning of printed circuit boards)
REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L41 ANSWER 9 OF 32 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:828894 HCAPLUS
DOCUMENT NUMBER: 134:23501
TITLE: Sulfonic acid onium salt and radiation-sensitive resin composition using same
INVENTOR(S): Wang, Isamu; Kobayashi, Eiichi
PATENT ASSIGNEE(S): JSR Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 34 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

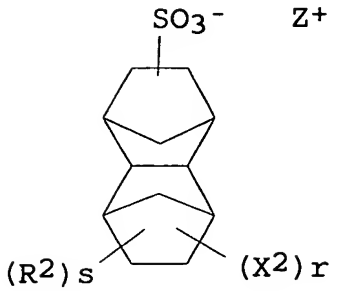
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000327654	A2	20001128	JP 1999-135030	1999 0514

PRIORITY APPLN. INFO.: JP 1999-135030 1999 0514

OTHER SOURCE(S): MARPAT 134:23501
GI



I



II

AB The title onium salt has the general formula I or II (X1, X2 = C2-10 organic group having **ester** bonds; R1, R2 = C1-10 alkyl, C1-10 alkoxy; m = 1-11; n = 0-19, m + n ≤ 11; r = 1-17; s = 0-16, r + s ≤ 17, when m, n, s, r ≥2, the plural groups of R1, R2, X1, and X2 are the same or different; Z + = S or I onium cation). A chemical-amplified pos.-working radiation sensitive resin composition, containing a radiation-sensitive acid generator comprising the onium salt and an acid-dissociating group-protected resin which is insol. or slightly soluble in alkali and becomes alkali-soluble when the protective group is dissociated and a chemical amplified neg.-working one, containing the acid generator, an alkali-soluble resin, and a compound capable of **crosslinking** the resin in the presence of acid, are also claimed. The novel onium compound is useful as a radiation-sensitive acid generator showing high sensitivity toward far **UV** rays and charged corpuscular beams and the radiation-sensitive resin compns. using the compound provide high resolution patterns with good profile.

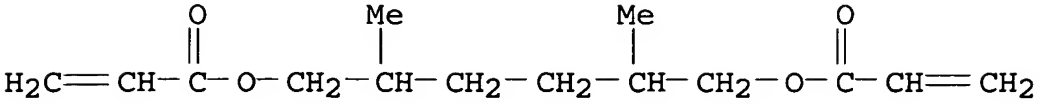
IT **259210-54-3DP**, p-Acetoxystyrene-tert-butyl acrylate-2,5-hexanedimethanol diacrylate-styrene copolymer, hydrolized
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(radiation **resist** composition containing sulfonic acid onium salt as acid generator)

RN 259210-54-3 HCAPLUS

CN 2-Propenoic acid, 2,5-dimethyl-1,6-hexanediyl ester, polymer with 1,1-dimethylethyl 2-propenoate, ethenylbenzene and 4-ethenylphenyl acetate (9CI) (CA INDEX NAME)

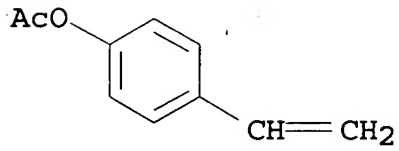
CM 1

CRN 259210-53-2
CMF C14 H22 O4



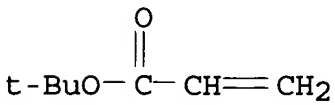
CM 2

CRN 2628-16-2
CMF C10 H10 O2



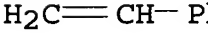
CM 3

CRN 1663-39-4
CMF C7 H12 O2



CM 4

CRN 100-42-5
CMF C8 H8



IC ICM C07C309-27
ICS C08K005-42; G03F007-004; G03F007-029; G03F007-039
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 24, 38
IT Aminoplasts
RL: TEM (Technical or engineered material use); USES (Uses)
(**crosslinking** agent; radiation resist composition containing sulfonic acid onium salt as acid generator)
IT 9011-05-6, MX 290 17464-88-9, Cymel 1174
RL: TEM (Technical or engineered material use); USES (Uses)
(**crosslinking** agent; radiation resist composition containing sulfonic acid onium salt as acid generator)
IT 109-92-2DP, Ethyl vinyl ether, ethers with polyhydroxystyrene 928-55-2DP, Ethyl propenyl ether, ethers with polyhydroxystyrene 2182-55-0DP, Cyclohexyl vinyl ether, ethers with polyhydroxystyrene 24979-70-2DP, Poly(p-hydroxystyrene), ethers 95418-60-3DP, p-tert-Butoxystyrene homopolymer, hydrolized 147625-42-1DP, Poly(4-hydroxystyrene) tert-butylcarbonate, ethers 147625-42-1P, Poly(4-hydroxystyrene) tert-butylcarbonate 160309-96-6DP, p-Acetoxystyrene-tert-butyl methacrylate copolymer, hydrolized 187601-74-7DP, Poly(tert-butoxystyrene), hydrolized, ethers 221549-67-3DP, p-Acetoxystyrene-tert-butyl acrylate-styrene copolymer, hydrolized **259210-54-3DP**, p-Acetoxystyrene-tert-butyl acrylate-2,5-hexanedimethanol diacrylate-styrene copolymer, hydrolized 310436-67-0P 310436-68-1P 310436-70-5P 310436-71-6P
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(radiation **resist** composition containing sulfonic acid onium salt as acid generator)

L41 ANSWER 10 OF 32 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:433487 HCAPLUS
DOCUMENT NUMBER: 133:36087
TITLE: Liquid photoresist
INVENTOR(S): Zhu, Liu; Shen, Wei; Wu, Kangxian
PATENT ASSIGNEE(S): Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 5 pp.
CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1227354	A	19990901	CN 1998-111154	19980224
PRIORITY APPLN. INFO.:			CN 1998-111154	19980224

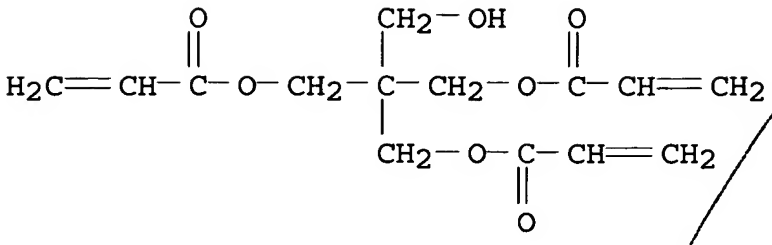
AB The liquid photoresist for manufacturing printed-circuit board contains **UV**-curable resin (alkali-soluble resin) 40-80, photocurable resin 15-30, photo **crosslinking** agent 5-20, and photoinitiator 1-3%. The alkali soluble resin is unsatd. acrylic resin with carboxyl on terminal group or lateral chain. The photocurable resin is epoxy group containing unsatd. acrylic resin, unsatd. acrylic polyester, etc. The photocrosslinking agent is acrylate, trimethylolpropane triacrylate, 1,6-hexanediol diacrylate, pentaerythritol triacrylate, etc. The photoinitiator is the derivs. of di-Ph **ketone**, benzoin, and acetophenone. The liquid photoresist also contains 0.5-5% water-soluble acrylic monomer and its derivative, such as β-hydroxylethyl acrylate, N-(hydroxylmethyl)acrylamide, etc. The liquid photoresist also contains silicone-containing defoaming agent and leveling agent, and 0.5-1.5% pigment.

IT **3524-68-3**, Pentaerythritol triacrylate **13048-33-4**, 1,6-Hexanediol diacrylate **15625-89-5**, Trimethylolpropane triacrylate
RL: TEM (Technical or engineered material use); USES (Uses)
(photocrosslinking agent; liquid **photoresist**)

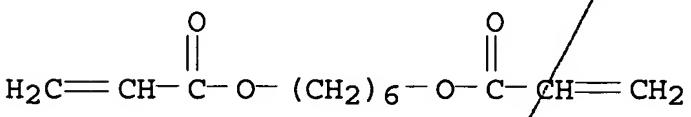
RN 3524-68-3 HCAPLUS

CN 2-Propenoic acid, 2-(hydroxymethyl)-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester (9CI) (CA INDEX NAME)

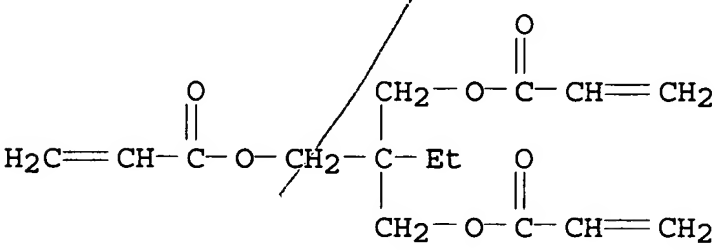
not Polym



RN 13048-33-4 HCAPLUS
CN 2-Propenoic acid, 1,6-hexanediyl ester (9CI) (CA INDEX NAME)



RN 15625-89-5 HCAPLUS
CN 2-Propenoic acid, 2-ethyl-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester (9CI) (CA INDEX NAME)



IC ICM G03F007-00
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38, 76
IT **3524-68-3**, Pentaerythritol triacrylate **13048-33-4**, 1,6-Hexanediol diacrylate **15625-89-5**, Trimethylolpropane triacrylate
RL: TEM (Technical or engineered material use); USES (Uses)
(photocrosslinking agent; liquid **photoresist**)
IT 98-86-2D, Acetophenone, hydroxy and morpholino derivative 119-61-9, Diphenyl **ketone**, uses
RL: TEM (Technical or engineered material use); USES (Uses)

(photoinitiator; liquid photoresist)

L41 ANSWER 11 OF 32 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1998:392511 HCAPLUS
DOCUMENT NUMBER: 129:123436
TITLE: Adhesive tapes for use in removal of resists from semiconductor devices and method for using them
INVENTOR(S): Chikada, Yukari; Namikawa, Ryo
PATENT ASSIGNEE(S): Nitto Denko Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10158601	A2	19980616	JP 1996-319436	1996 1129

PRIORITY APPLN. INFO.: JP 1996-319436 1996 1129

AB The tapes have a film support on which an adhesive with cured tensile modulus of ≥80 kg/mm2 and cured tensile elongation of ≥10% is applied. The removal of resists from semiconductor devices is done by affixing the tape to the resists, irradiating with energy rays, and detaching the tape with cured adhesive from the semiconductor device surface. Thus, coating a mixture of an acrylic acid-Me acrylate copolymer, BuOH-modified melamine **crosslinker**, dipentaerythritol hydroxypentaacrylate and α-hydroxycyclohexyl Ph **ketone** on the corona-discharged surface of a polyester film, and drying gave an adhesive tape which, when affixing on a silicon wafer, showed 180°-peel strength (at room temperature and 300 mm/min) 825 and 10 g/10 mm, adhesive cured tensile modulus 0.05 and 80 kg/mm2 and tensile elongation 1500 and 25% initially and after irradiating with 365-nm **UV** light, resp. The removal of resists was highly effective with the tapes.

IT **210161-71-0**, Acrylic acid-dipentaerythritol hydroxypentaacrylate-melamine-methyl acrylate copolymer

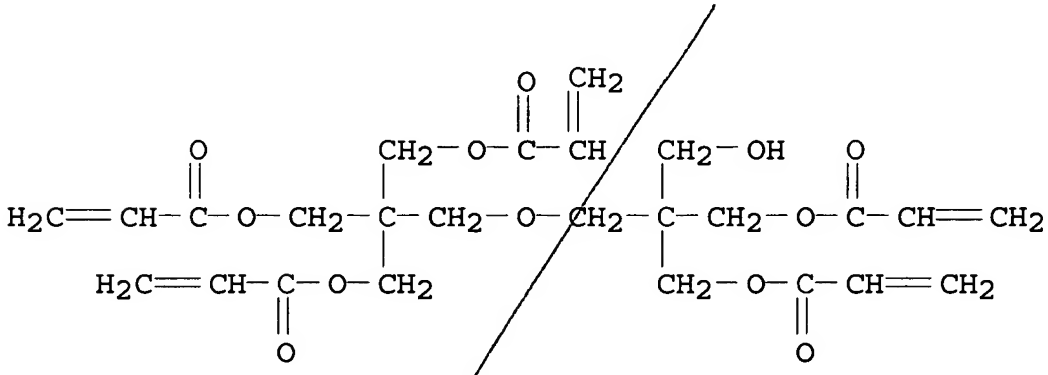
RL: PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(adhesives; adhesive tapes for use in removal of **resists** from semiconductor devices and method for using them)

RN 210161-71-0 HCAPLUS

CN 2-Propenoic acid, polymer with 2-[[3-hydroxy-2,2-bis[[(1-oxo-2-propenyl)oxy]methyl]propoxy]methyl]-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl di-2-propenoate, methyl 2-propenoate and 1,3,5-triazine-2,4,6-triamine (9CI) (CA INDEX NAME)

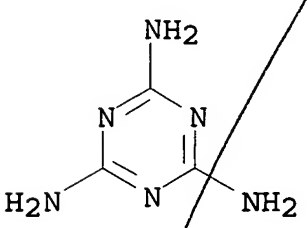
CM 1

CRN 60506-81-2
CMF C25 H32 O12



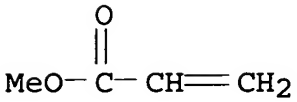
CM 2

CRN 108-78-1
CMF C3 H6 N6



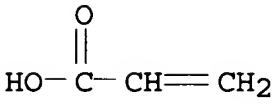
CM 3

CRN 96-33-3
CMF C4 H6 O2



CM 4

CRN 79-10-7
CMF C3 H4 O2



IC ICM C09J007-02
ICS H01L021-027
CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 76
ST adhesive tape semiconductor resist removal; **UV** curable adhesive tape resist removal
IT Adhesive tapes
(**UV**-curable, for use in removal of resists from semiconductor devices and method for using them)
IT **Crosslinking**
(photochem.; adhesive tapes for use in removal of resists from semiconductor devices and method for using them)
IT **210161-71-0**, Acrylic acid-dipentaerythritol hydroxypentaacrylate-melamine-methyl acrylate copolymer
RL: PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(adhesives; adhesive tapes for use in removal of **resists** from semiconductor devices and method for using them)

L41 ANSWER 12 OF 32 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1996:319128 HCAPLUS
DOCUMENT NUMBER: 125:71884
TITLE: Photosensitive unsaturated epoxy **ester** with quaternary ammonium and phosphate groups
INVENTOR(S): Kinashi, Keiichi; Samukawa, Hiroshi; Chiba, Reiko
PATENT ASSIGNEE(S): W. R. Grace and Co., USA
SOURCE: U.S., 7 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5512607	A	19960430	US 1995-469308	19950606

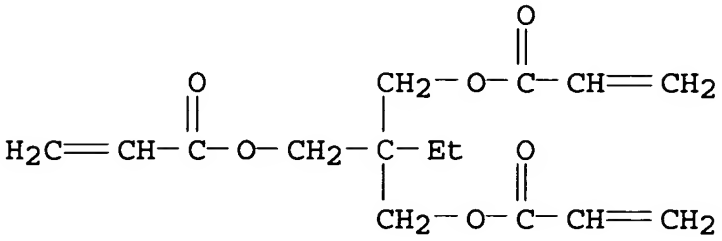
PRIORITY APPLN. INFO.: US 1995-469308 19950606

AB Photosensitive resin compns. are prepared and used in photoresists suitable for developing with water. The compns. are prepared by partial esterification of an epoxy resin with an unsatd. **carboxylic acid** and reaction of the remaining epoxy groups with H3PO4 (or a mono- or diester) and a tertiary amine. Reacting a cresol novolak epoxy resin with acrylic acid, reacting the resulting **ester** with H3PO4 and Me2NCH2CH2OH, and mixing the product with a photopolymn. initiator, a melamine resin derivative, p-MeC6H4SO3H, and trimethylolpropane triacrylate gave a photoresist which was exposed to **UV** light through a mask, developed with water, and cured at 150°.

IT **15625-89-5**, Trimethylolpropane triacrylate
RL: NUU (Other use, unclassified); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(in **photoresists** containing epoxy acrylate phosphate quaternary ammonium salts for developing with water)

RN 15625-89-5 HCAPLUS
CN 2-Propenoic acid, 2-ethyl-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-

propanediyl ester (9CI) (CA INDEX NAME)



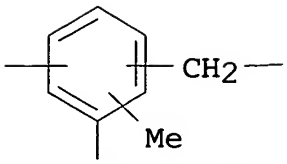
IC ICM G03F007-004
INCL 522100000
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 37, 76
IT Epoxy resins, properties
RL: NUU (Other use, unclassified); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(**esters** with acrylic and phosphoric acids, quaternary ammonium salts; in photoresist compns. for developing with water)
IT **Crosslinking**
(photochem., of epoxy acrylate phosphate quaternary ammonium salts in photoresists for developing with water)
IT 79-10-7D, Acrylic acid, **esters** with epoxy resins and phosphoric acid, quaternary ammonium salts 108-01-0D, Dimethylaminoethanol, salts with phosphate and acrylate **esters** of epoxy resins 598-02-7D, Diethyl phosphate, **esters** with epoxy resin acrylates, quaternary ammonium salts 1623-14-9D, Monoethyl phosphate, **esters** with epoxy resin acrylates, quaternary ammonium salts 7664-38-2D, Phosphoric acid, **esters** with epoxy resin acrylates, quaternary ammonium salts 81775-74-8D, EPPN 201, **esters** with acrylic and phosphoric acids, quaternary ammonium salts 94362-50-2D, Epo Tohto YDCN 704, **esters** with acrylic and phosphoric acids, quaternary ammonium salts 109190-39-8D, Epo Tohto YDCN 702, **esters** with acrylic and phosphoric acids, quaternary ammonium salts
RL: NUU (Other use, unclassified); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(in photoresist compns. for developing with water)

IT **15625-89-5**, Trimethylolpropane triacrylate
RL: NUU (Other use, unclassified); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(in **photoresists** containing epoxy acrylate phosphate quaternary ammonium salts for developing with water)

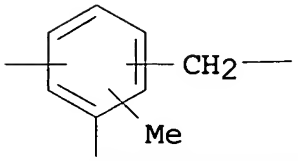
L41 ANSWER 13 OF 32 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1995:128104 HCAPLUS
DOCUMENT NUMBER: 122:163639
TITLE: Phenolic resins curable by actinic radiation
INVENTOR(S): Aoki, Nobuo; Kato, Hitoshi; Oota, Hiroyuki
PATENT ASSIGNEE(S): Toa Gosei Chem Ind, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 06192387	A2	19940712	JP 1992-359018	1992 1224
PRIORITY APPLN. INFO.:			JP 1992-359018	1992 1224

GI



$OCH_2CH(OH)CH_2O_2CCH{=}CH_2$ I



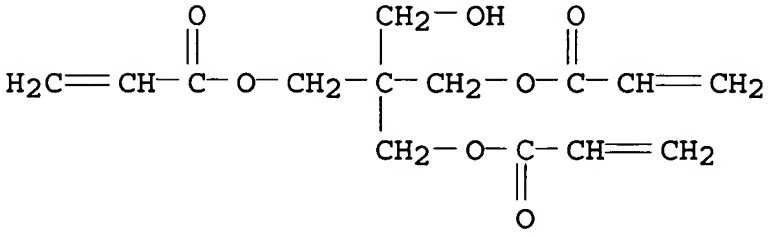
$OCH_2CH(O_2CCH_2CH_2CO_2H)CH_2O_2CCH{=}CH_2$ II

AB The resins, with number-average mol. weight 2000-130,000 and comprising structural units I and II (I/II = 8/2 to 6/4), are manufactured by treating cresol novolak epoxy resins with softening temperature (measured by ring and ball method) ≥80° with unsatd. monocarboxylic acids, followed by treating with 0.2-0.4 equiv succinic anhydride per equiv OH in the reaction product. Thus, 981 parts YDCN 704P (cresol novolak epoxy resin) was treated with 345 parts acrylic acid to acid value 0.5 mg KOH/g, then treated with 115 parts succinic anhydride (25 mol% on total OH) to give a resin with number-average mol. weight 3300 (I/II ≈ 7.5/2.5), 75 parts of which was mixed with M 305 (pentaerythritol triacrylate) 5, Irgacure 651 5, melamine 4 parts, and additives to give an ink, which was mixed with YDCN 704P 25, Et Carbitol acetate 5, and xylene 3 parts to give a resist ink, which was screen-printed on a patterned printed circuit board and irradiated with **UV** at 500 mJ/cm2 through a resist pattern film, developed by aqueous Na2CO3, then cured at 150° to give a film with pencil hardness 6H and good heat and solder resistance.

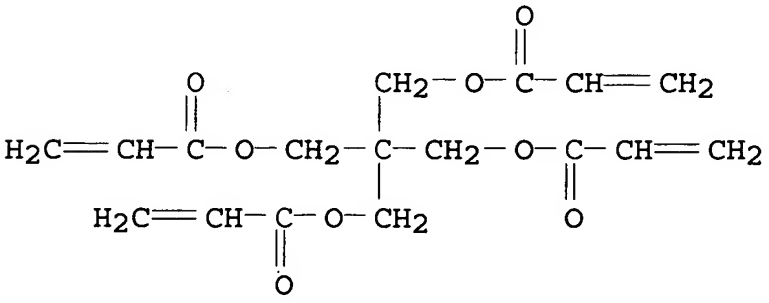
IT **3524-68-3DP**, polymers with cresol novolak epoxy resin acrylate reaction products with succinic anhydride and cresol novolak epoxy resins **4986-89-4DP**, polymers with cresol novolak epoxy resin reaction products with polycaprolactone acrylate and succinic anhydride, and cresol novolak epoxy resins **29570-58-9DP**, Dipentaerythritol hexaacrylate, polymers with cresol novolak epoxy resin acrylate reaction products with succinic anhydride and cresol novolak epoxy resins
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical

or engineered material use); PREP (Preparation); USES (Uses)
(**UV**-curable compns. for solder **resists** for
printed circuit manufacture)

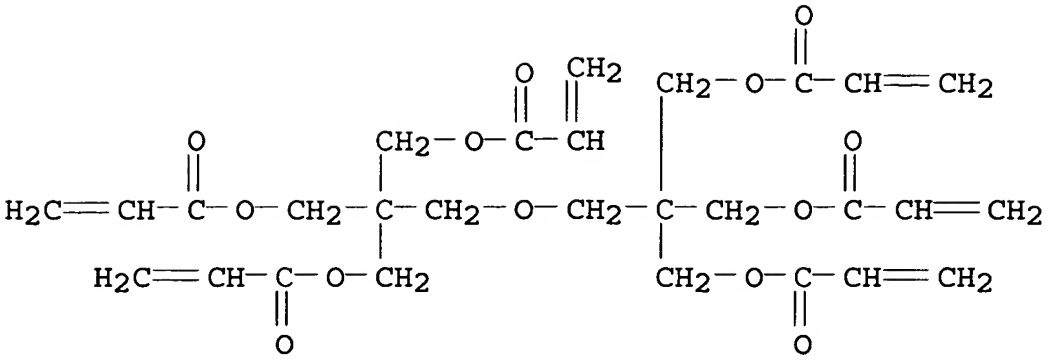
RN 3524-68-3 HCAPLUS
CN 2-Propenoic acid, 2-(hydroxymethyl)-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester (9CI) (CA INDEX NAME)



RN 4986-89-4 HCAPLUS
CN 2-Propenoic acid, 2,2-bis[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester (9CI) (CA INDEX NAME)



RN 29570-58-9 HCAPLUS
CN 2-Propenoic acid, 2-[[3-[(1-oxo-2-propenyl)oxy]-2,2-bis[[(1-oxo-2-propenyl)oxy]methyl]propoxy]methyl]-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester (9CI) (CA INDEX NAME)



IC ICM C08G059-17
ICS C08F299-02

CC 42-9 (Coatings, Inks, and Related Products)
Section cross-reference(s): 76

ST phenol novolak epoxy vinyl **ester**; heat resistant solder resist; solder resist epoxy phenolic resin

IT Phenolic resins, uses
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(epoxy, unsatd. **esters**, reaction products with succinic anhydride; **UV**-curable compns. for solder resists for printed circuit manufacture)

IT Epoxy resins, uses
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(phenolic, unsatd. **esters**, reaction products with succinic anhydride; **UV**-curable compns. for solder resists for printed circuit manufacture)

IT Electric circuits
(printed, **UV**-curable compns. for solder resists for printed circuit manufacture)

IT Soldering
(resists, **UV**-curable compns. for solder resists for printed circuit manufacture)

IT 161544-94-1DP, Epo Tohto YDCN 704P, polymers with cresol novolak epoxy resin acrylate reaction products with succinic acid and acrylate **crosslinkers**
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**UV**-curable compns. for solder resists for printed

circuit manufacture)

IT 108-30-5DP, Succinic anhydride, reaction products with cresol novolak epoxy resin acrylates, polymers with acrylate **crosslinkers** and cresol novolak epoxy resins **3524-68-3DP**, polymers with cresol novolak epoxy resin acrylate reaction products with succinic anhydride and cresol novolak epoxy resins **4986-89-4DP**, polymers with cresol novolak epoxy resin reaction products with polycaprolactone acrylate and succinic anhydride, and cresol novolak epoxy resins **29570-58-9DP**, Dipentaerythritol hexaacrylate, polymers with cresol novolak epoxy resin acrylate reaction products with succinic anhydride and cresol novolak epoxy resins 40220-08-4DP, Aronix M 315, polymers with cresol novolak epoxy resin acrylate reaction products with succinic anhydride and cresol novolak epoxy resins 61710-43-8DP, Sumiepoxy ESCN 220HH, polymers with cresol novolak epoxy resin acrylate reaction products with succinic anhydride and acrylate **crosslinkers** 97387-29-6DP, reaction products with cresol novolak epoxy resin, polymers with acrylate **crosslinkers** and cresol novolak epoxy resin 139948-58-6DP, Epikote 180S90, polymers with cresol novolak epoxy resin acrylate reaction products with succinic anhydride and acrylate **crosslinkers** 147335-36-2DP, Epikote 180S90 acrylate, reaction products with succinic anhydride, polymers with acrylate **crosslinkers** and cresol novolak epoxy resins 160936-13-0DP, reaction products with succinic anhydride, polymers with pentaerythritol triacrylate and cresol novolak epoxy resin 160936-37-8DP, reaction products with succinic anhydride, polymers with acrylate **crosslinkers** and cresol novolak epoxy resins
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**UV**-curable compns. for solder **resists** for printed circuit manufacture)

L41 ANSWER 14 OF 32 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1991:452044 HCAPLUS
DOCUMENT NUMBER: 115:52044
TITLE: Ultraviolet-curable acrylate polymers for etching resist inks for printed circuit boards
INVENTOR(S): Kobayashi, Masaaki
PATENT ASSIGNEE(S): Gooh Chemical Industry Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 03031310	A2	19910212	JP 1989-166136	19890628
JP 2707137	B2	19980128		
PRIORITY APPLN. INFO.:			JP 1989-166136	19890628

AB The title compns. with good printing characteristics comprise half **esters** of polybasic acid anhydrides and hydroxyalkyl (meth)acrylates 5-90, C9-10 saturated monocarboxylic acid vinyl **esters** R1R2R3CCO2CH:CH2 (R1-R3 = saturated alkyl, ≥1 of R1-R3 is Me) 1-20, trimethylolpropane tri(meth)acrylates 0.1-5, and photopolymn. initiators 1-10%. Thus, hexahydroxyphthalic acid monoacryloylhydroxyethyl **ester** 66, 4-methylhexahydroxyphthalic acid monomethacryloylhydroxyethyl **ester** 22, Veova 9 11, trimethylolpropane trimethacrylate 1, and benzil di-Me ketal 5 parts were mixed to give a **UV**-curable composition, which was mixed with BaSO4 50, talc 15, phthalocyanine blue 1, Aerosil 200 3, SH 29PA (antifoaming agent) 0.1, and Modaflow 1 part, then roll kneaded to give an etching resist ink. The ink was screen printed on a Cu plate and cured with 80 W/cm high pressure mercury lamp to give a film showing pencil hardness 3H and cross-cut adhesion 100/100, which after etching was easily peeled from the plate by treating with 3% aqueous NaOH at 40° for 9 s.

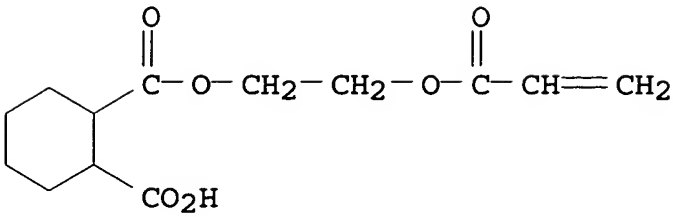
IT **134900-89-3 134900-90-6 134900-91-7**
RL: USES (Uses)
(**crosslinked**, **UV**-curable, for etching **resist** inks for printed elec. circuits)

RN 134900-89-3 HCAPLUS

CN 1,2-Cyclohexanedicarboxylic acid, methyl-, mono[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl] ester, polymer with ethenyl neononanoate, 2-ethyl-2-[[(2-methyl-1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl bis(2-methyl-2-propenoate) and [2-[(1-oxo-2-propenyl)oxy]ethyl] hydrogen 1,2-cyclohexanedicarboxylate (9CI) (CA INDEX NAME)

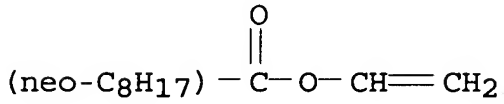
CM 1

CRN 57043-35-3
CMF C13 H18 O6



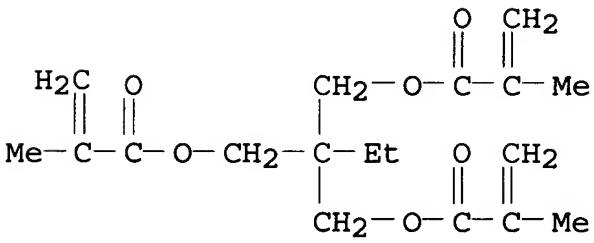
CM 2

CRN 54423-67-5
CMF C11 H20 O2
CCI IDS



CM 3

CRN 3290-92-4
CMF C18 H26 O6



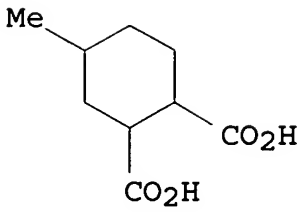
CM 4

CRN 93951-37-2

CMF C15 H22 O6
CCI IDS

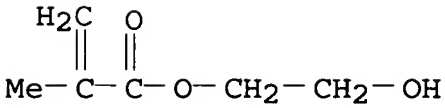
CM 5

CRN 57567-84-7
CMF C9 H14 O4



CM 6

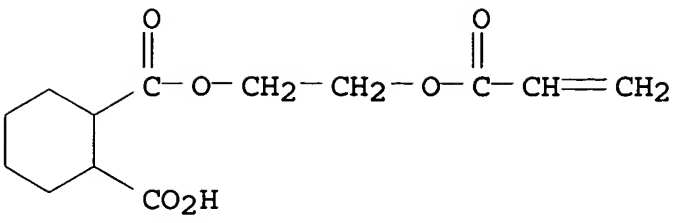
CRN 868-77-9
CMF C6 H10 O3



RN 134900-90-6 HCAPLUS
CN 1,2-Cyclohexanedicarboxylic acid, methyl-, mono[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl] ester, polymer with ethenyl tert-decanoate, 2-ethyl-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl di-2-propenoate and [2-[(1-oxo-2-propenyl)oxy]ethyl] hydrogen 1,2-cyclohexanedicarboxylate (9CI) (CA INDEX NAME)

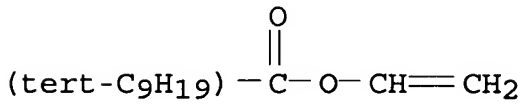
CM 1

CRN 57043-35-3
CMF C13 H18 O6



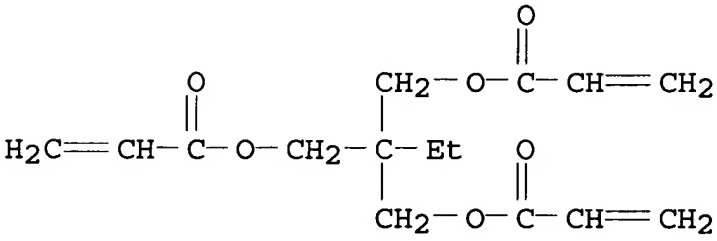
CM 2

CRN 26544-09-2
CMF C12 H22 O2
CCI IDS



CM 3

CRN 15625-89-5
CMF C15 H20 O6

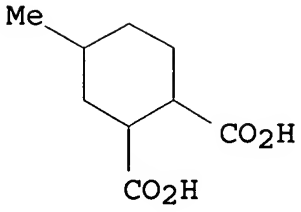


CM 4

CRN 93951-37-2
CMF C15 H22 O6
CCI IDS

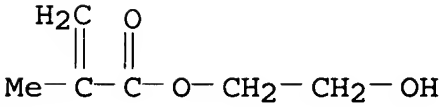
CM 5

CRN 57567-84-7
CMF C9 H14 O4



CM 6

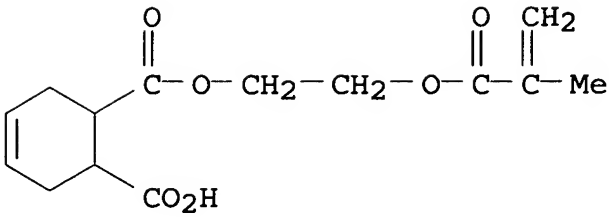
CRN 868-77-9
CMF C6 H10 O3



RN 134900-91-7 HCAPLUS
CN 4-Cyclohexene-1,2-dicarboxylic acid, methyl-, mono[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl] ester, polymer with ethenyl tert-decanoate, 2-ethyl-2-[[(2-methyl-1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl bis(2-methyl-2-propenoate) and [2-[(1-oxo-2-propenyl)oxy]ethyl] hydrogen 1,2-benzenedicarboxylate (9CI) (CA INDEX NAME)

CM 1

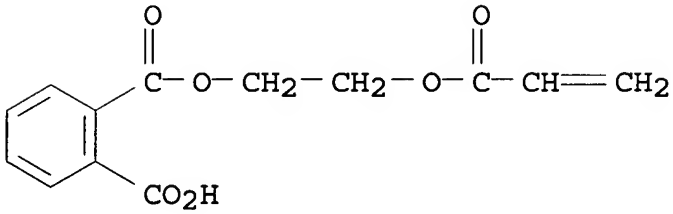
CRN 64692-76-8
CMF C15 H20 O6
CCI IDS



D1—Me

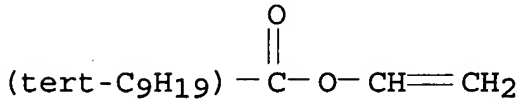
CM 2

CRN 30697-40-6
CMF C13 H12 O6



CM 3

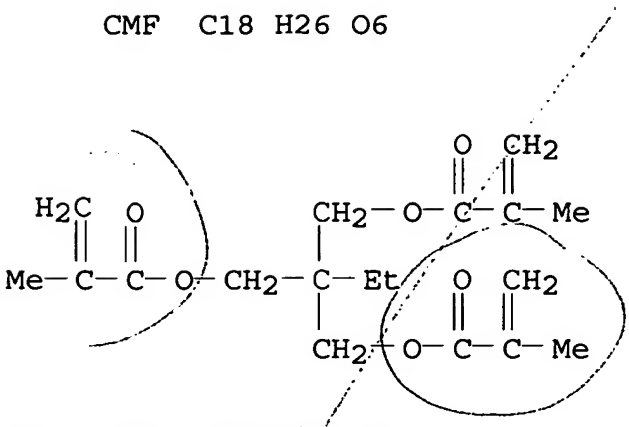
CRN 26544-09-2
CMF C12 H22 O2
CCI IDS



CM 4

CRN 3290-92-4

CMF C18 H26 O6



IC ICM C08F220-26
ICS C08F002-48; C08F218-10
ICA C08F220-20
CC 42-12 (Coatings, Inks, and Related Products)
Section cross-reference(s): 76
ST acrylate polymer **UV** curable compn; etching resist ink
UV curable compn; printed elec circuit resist ink
IT Resists
(photo-, acrylate polymer compns., **UV**-curable, for manufacture of printed elec. circuits)
IT Electric circuits
(printed, etching resist inks for, **UV**-curable acrylate polymer compns. as)
IT Inks
(printing, **UV**-curable, acrylate polymer compns. for, for etching resists for printed elec. circuits)
IT **134900-89-3 134900-90-6 134900-91-7**
RL: USES (Uses)
(**crosslinked**, **UV**-curable, for etching **resist** inks for printed elec. circuits)
IT 7473-98-5, 2-Hydroxy-2-methyl-1-phenylpropan-1-one 24650-42-8
RL: USES (Uses)
(photopolymn. initiators, acrylic polymer **UV**-curable compns. containing)

L41 ANSWER 15 OF 32 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1990:149083 HCAPLUS
DOCUMENT NUMBER: 112:149083
TITLE: **UV**-curable resin compositions as etching resist inks for printed circuits
INVENTOR(S): Ochi, Kiyoyuki
PATENT ASSIGNEE(S): Showa Highpolymer Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

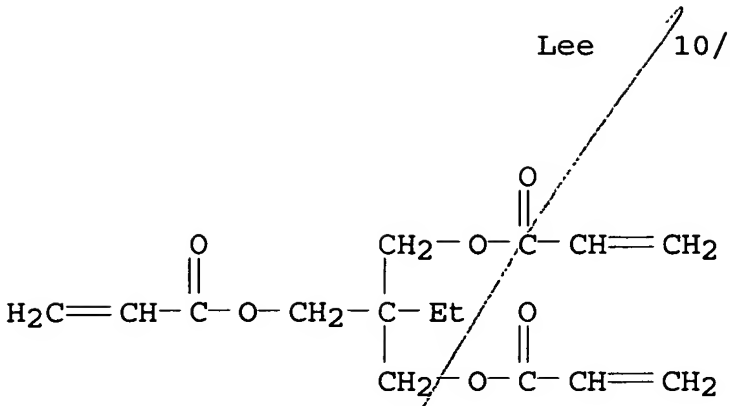
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 01242609	A2	19890927	JP 1988-67274	19880323
JP 06055794	B4	19940727		

PRIORITY APPLN. INFO.: JP 1988-67274 19880323

AB The title compns., having good curing properties, hardness, etching solution resistance, and removability by aqueous alkaline solns., comprise carboxy epoxy acrylates prepared from polybasic anhydrides and epoxy acrylates, half **esters** prepared from polybasic anhydrides and hydroxyalkyl (meth)acrylates, photopolymerizable monomers, and photopolymn. initiators. A composition containing Epikote 828 acrylate **esters** with maleic anhydride 40, tetrahydrophthalic acid mono(acryloyloxyethyl) **ester** 30, tripropylene glycol diacrylate 20, trimethylolpropane triacrylate 10, and 2-hydroxy-2-methyl-1-phenyl-1-propanone 4 parts was coated on Cu and photocured to give pencil hardness 3H, cross-cut adhesion 100/100, no peeling after 3 min in 40% aqueous FeCl3 at 40°, and good alkali solubility

IT **15625-89-5**, Trimethylolpropane triacrylate
126038-05-9
RL: USES (Uses)
(**photoresists** containing, for manufacture of printed circuits)

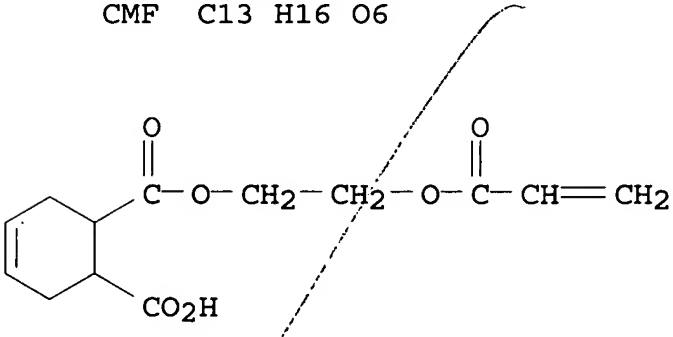
RN 15625-89-5 HCAPLUS
CN 2-Propenoic acid, 2-ethyl-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester (9CI) (CA INDEX NAME)



RN 126038-05-9 HCAPLUS
CN 4-Cyclohexene-1,2-dicarboxylic acid, mono[2-[(1-oxo-2-propenyl)oxy]ethyl] ester, polymer with (chloromethyl)oxirane polymer with 4,4'-(1-methylethylidene)bis[phenol] (2Z)-2-butenedioate 2-propenoate, 2-ethyl-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl di-2-propenoate and (1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)] di-2-propenoate (9CI) (CA INDEX NAME)

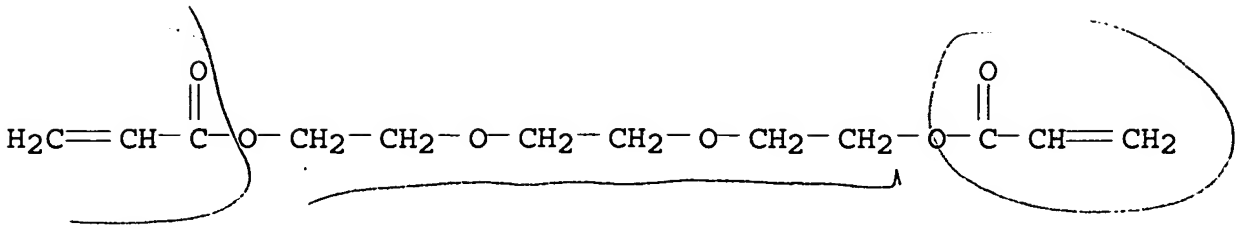
CM 1

CRN 70559-03-4
CMF C13 H16 O6



CM 2

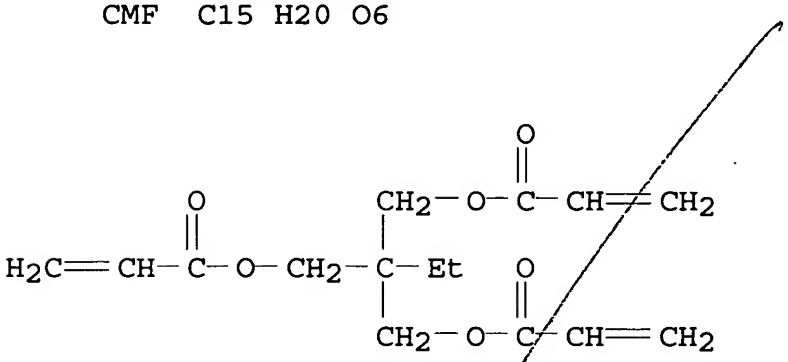
CRN 42978-66-5
CMF C15 H24 O6
CCI IDS



3 (D1—Me)

CM 3

CRN 15625-89-5
CMF C15 H20 O6



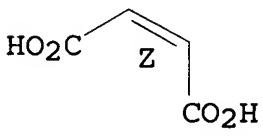
CM 4

CRN 68071-06-7
CMF (C15 H16 O2 . C3 H5 Cl O)x . x C4 H4 O4 . x C3 H4 O2

CM 5

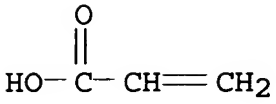
CRN 110-16-7
CMF C4 H4 O4

Double bond geometry as shown.



CM 6

CRN 79-10-7
CMF C3 H4 O2

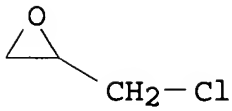


CM 7

CRN 25068-38-6
CMF (C15 H16 O2 . C3 H5 Cl O)x
CCI PMS

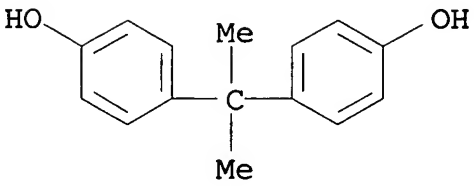
CM 8

CRN 106-89-8
CMF C3 H5 Cl O



CM 9

CRN 80-05-7
CMF C15 H16 O2



IC ICM C08F220-26

ICS C08F002-48; C08F220-26; G03C001-68
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 37, 76
ST epoxy acrylate carboxylate photoresist; resist photo epoxy acrylate carboxylate; maleate epoxy acrylate photoresist; **crosslinking** photochem epoxy acrylate; elec circuit printed photoresist
IT **Crosslinking**
(photochem., epoxy acrylate carboxylates for, as resists)
IT **15625-89-5**, Trimethylolpropane triacrylate 42978-66-5, Tripropylene glycol diacrylate 68071-06-7 70559-03-4 **126038-05-9**
RL: USES (Uses)
(**photoresists** containing, for manufacture of printed circuits)

L41 ANSWER 16 OF 32 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1989:622130 HCAPLUS
DOCUMENT NUMBER: 111:222130
TITLE: Radiation-curable resin compositions useful for protection of printed circuit boards
INVENTOR(S): Noguchi, Hiromichi
PATENT ASSIGNEE(S): Canon K. K., Japan
SOURCE: Eur. Pat. Appl., 22 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 6
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 307923	A2	19890322	EP 1988-115158	1988 0915
EP 307923	A3	19890614		
EP 307923	B1	19930519		
R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
US 5068257	A	19911126	US 1988-244347	1988 0915
AT 89573	E	19930615	AT 1988-115158	1988 0915

ES 2040794	T3	19931101	ES 1988-115158	1988 0915
JP 02097517	A2	19900410	JP 1988-231648	1988 0916
JP 2549424	B2	19961030		
PRIORITY APPLN. INFO.:			JP 1987-229492 A	1987 0916
			JP 1988-159078 A	1988 0629
			EP 1988-115158 A	1988 0915

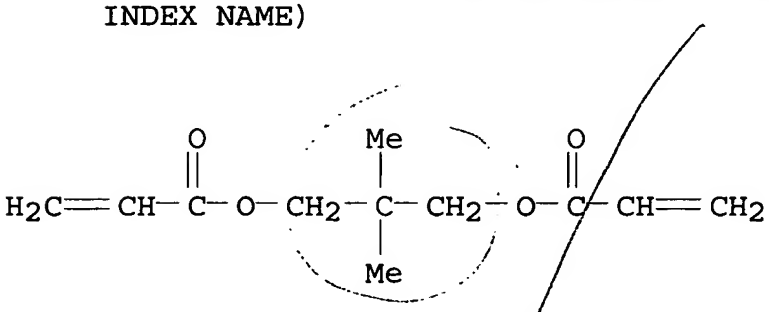
AB The chemical-resistant title compns. having good adhesion to metals, glass, etc., useful as protective resists for printed circuit boards, comprise a graft acrylic polymer having a number-average mol. weight (Mn) ≥5000 and a weight-average mol. weight (Mw) ≤50,000, a linear acrylic polymer having Mn ≥5000, Mw ≤350,000, and glass transition temperature (Tg) ≥60, a half-esterified epoxy resin, and unsatd. monomer, and a radiation-induced Lewis acid generating initiator. Thus, 2-hydroxyethyl methacrylate-butoxymethylacrylamide-Me methacrylate graft copolymer (Mn 5000, Mw 30,000), a linear copolymer (prepared from Me methacrylate, tricyclodecyl methacrylate, and butoxymethylacrylamide; Mn 60,000, Mw 260,000), an acrylic **ester** of a phenol novolak type epoxy resin, neopentyl glycol diacrylate, UVE-1014 (aromatic onium salt photoinitiator), Darocure 1173 C photoinitiator), methylene blue, Me Cellosolve, and MEK were mixed, applied to a Cu-clad glass fiber-reinforced epoxy substrate, air-dried, exposed to a **UV** light source through a patterned mask, developed with Cl3CCH3, and post-cured to prepare a protective film with excellent resistance to chems.

IT **2223-82-7D**, polymer with graft polyacrylate and linear acrylic resins and epoxy resin acrylate and unsatd. compds.
15625-89-5D, Trimethylolpropane triacrylate, polymer with graft polyacrylate and linear acrylic resins and epoxy resin acrylate and unsatd. compds.
RL: USES (Uses)

(**photoresists**, with improved chemical resistance and adhesion, for printed circuit board protection)

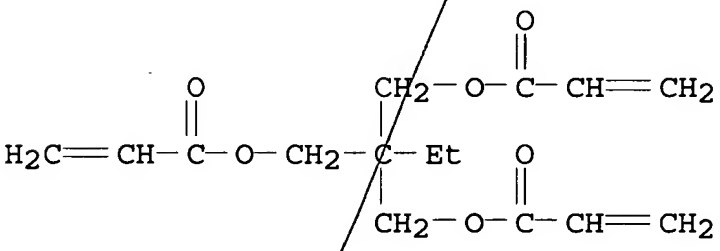
RN 2223-82-7 HCAPLUS

CN 2-Propenoic acid, 2,2-dimethyl-1,3-propanediyl ester (9CI) (CA INDEX NAME)



RN 15625-89-5 HCAPLUS

CN 2-Propenoic acid, 2-ethyl-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester (9CI) (CA INDEX NAME)



IC ICM C08F299-02
ICS C08L063-10; C08F283-10; C08L051-00; G03F007-10

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST radiation curable acrylic epoxy resin; **UV** curable acrylic epoxy coating; circuit board protective coating photocurable; photoresist acrylic epoxy resin; onium salt initiator photoresist

IT Phenolic resins, compounds
RL: USES (Uses)
(epoxy, novolak, acrylates, reaction products, **crosslinked** with polyacrylates, as protective photoresists for printed circuit boards)

IT Epoxy resins, compounds
RL: USES (Uses)
(phenolic, novolak, acrylates, reaction products, **crosslinked** with polyacrylates, as protective

photoresists for printed circuit boards)

IT **2223-82-7D**, polymer with graft polyacrylate and linear acrylic resins and epoxy resin acrylate and unsatd. compds. **15625-89-5D**, Trimethylolpropane triacrylate, polymer with graft polyacrylate and linear acrylic resins and epoxy resin acrylate and unsatd. compds. 55818-57-0D, polymer with polyacrylate and linear acrylic resin and unsatd. compds., graft 67100-85-0D, polymer with graft polyacrylate and linear acrylic resins and epoxy resin acrylate and unsatd. compds. 123011-68-7D, polymer with linear acrylic resins and epoxy resin acrylate and unsatd. compds. 123786-04-9D, polymers with graft polyacrylate and epoxy resin acrylate and vinyl compds., graft 123786-05-0D, polymer with linear acrylic resins and epoxy acrylate and acrylic compds. 123787-19-9D, polymer with graft poly acrylate and epoxy acrylate and acrylic compds.
RL: USES (Uses)
(**photoresists**, with improved chemical resistance and adhesion, for printed circuit board protection)

L41 ANSWER 17 OF 32 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1989:505796 HCAPLUS
DOCUMENT NUMBER: 111:105796
TITLE: Solder resist resin compositions with good storability and low-temperature curability
INVENTOR(S): Yokoshima, Minoru; Nawata, Kazumitsu
PATENT ASSIGNEE(S): Nippon Kayaku Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 63150314	A2	19880623	JP 1986-294726	1986 1212
PRIORITY APPLN. INFO.:			JP 1986-294726	1986 1212

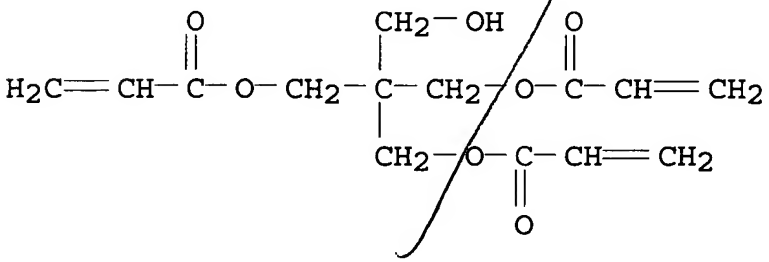
AB The title compns. forming heat- and chemical-resistant elec. insulating films for permanent protection of printed circuit

boards contain (A) vinuyphenol-alkyl (meth)acrylate copolymer, (B) novolak epoxy resin-(meth)acrylic acid-polybasic **carboxylic acid** anhydride reaction product, (C) tris(2,3-epoxypropyl)isocyanurate (I), (D) unsatd. monomer, (E) photoinitiator, (F) radiation-sensitive catalyst precursor that undergoes **UV**- or electron beam-induced degradation to give Lewis acid catalyst for polymerization of epoxy compds., and (G) organic solvent. A composition storable without gelation at 60° for >30 days was prepared from p-vinylphenol-me methacrylate copolymer 16.6, 1796:720:470.6 Epikote 154-acrylic acid-phthalic anhydride reaction product 19.6, I 2.7, pentaerythritol triacrylate 13.3, carbitol acrylate 13.2, tris(hydroxyethyl) isocyanurate diacrylate 10.3, benzyl di-me ketal 1.5, triphenylsulfonium hexafluoroantimonte 0.03, butyl Cellosolve acetate 16.6, and talc 30.0 parts, screen-printed 20-50 μm-thick on printed circuit board with through holes, dried at 70° for 60 min, exposed to **UV** lamp via neg. film, developed with 2% aqueous Na2CO3, dried, and cured at 100° for 30 min to give a solder-and solvent-resistant coating with good adhesion and insulation resistance 1 + 1012 Ω.

IT **3524-68-3**
RL: USES (Uses)
(in solder **resists**, containing vinylphenol-Me methacrylate copolymer and epoxy resins **esters**, storable, heat- and chemical-resistant, for printed circuit board manufacture)

RN 3524-68-3 HCAPLUS

CN 2-Propenoic acid, 2-(hydroxymethyl)-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester (9CI) (CA INDEX NAME)



IC ICM C08F299-02
ICS C08F002-48; C08F291-00

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST vinylphenol methacrylate copolymer solder resist; epoxy resin **ester** solder resist; glycidyl isocyanurate solder resist; acrylate solder resist; heat resistant solder resist; solvent resistant solder resist; printed circuit board solder resist

IT Chemically resistant materials
Heat-resistant materials
(polymeric solder resists, containing vinylphenol-Me methacrylate copolymer and epoxy resin **esters**)

IT Epoxy resins, compounds
RL: USES (Uses)
(**esters**, solder resists containing, storable, heat- and chemical-resistant, for printed circuit board manufacture)

IT **Crosslinking** catalysts
(photochem., benzyl di-me metal and triphenylsulfonium hexafluoroantimonate, for solder resists containing vinylphenol-Me methacrylate copolymer and epoxy resin **esters**)

IT Electric circuits
(printed, boards, manufacture of, polymeric solders resists in, containing vinylphenol-Me methacrylate copolymer and epoxy resin **esters**)

IT Resists
(solder, polymeric, heat- and chemical-resistant, storable, containing
vinylphenol-Me methacrylate copolymer and epoxy resin **esters**)

IT 24650-42-8 57840-38-7, Triphenylsulfonium hexafluoroantimonate
RL: CAT (Catalyst use); USES (Uses)
(**crosslinking** catalysts, in solder resists containing vinylphenol-Me methacrylate copolymer and epoxy resin **ester** and acrylic and epoxy compds.)

IT 2451-62-9, Tris(2,3-epoxypropyl)-isocyanurate **3524-68-3** 5117-12-4, Acryloylmorpholine 7328-17-8, Carbitol acrylate 87605-70-7, Tris(hydroxyethyl)isocyanurate diacrylate
RL: USES (Uses)
(in solder **resists**, containing vinylphenol-Me methacrylate copolymer and epoxy resins **esters**, storable, heat- and chemical-resistant, for printed circuit board manufacture)

IT 79-10-7D, Acrylic acid, **esters** with epoxy resins and phthalic anhydride or tetrahydrophthalic anhydride 85-43-8D, Tetrahydrophthalic anhydride, **esters** with epoxy resins and acrylic acid 85-44-9D, Phthalic anhydride, **esters** with epoxy resins and acrylic acid 24979-71-3 63939-13-9D, Epikote 154, **esters** with acrylic acid and phthalic anhydride or tetrahydrophthalic anhydride

RL: USES (Uses)
(solder resists containing, storable, heat- and chemical-resistant, for printed circuit board manufacture)

L41 ANSWER 18 OF 32 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1989:505795 HCAPLUS
DOCUMENT NUMBER: 111:105795
TITLE: Solder resist resin compositions with good storability and low-temperature curability
INVENTOR(S): Yokoshima, Minoru; Nawata, Kazumitsu
PATENT ASSIGNEE(S): Nippon Kayaku Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 63150315	A2	19880623	JP 1986-294727	1986 1212
PRIORITY APPLN. INFO.:			JP 1986-294727	1986 1212

AB The title compns. forming heat- and chemical-resistant, elec. insulating films for permanent protection of printed circuit boards contain (A) poly(vinylphenol) and/or vinylphenol-alkyl (meth)acrylate copolymer, (B) 1:0.1-0.7 (equiv) novolak epoxy resin-(meth)acrylic acid **ester**, (C) unsatd. monomer, (D) radiation-sensitive catalyst precursor that undergoes **UV** - or electron beam-induced degradation to give Lewis acid catalyst for polymerization of epoxy compds., (E) photopolymn. initiator, and (F) organic solvent. A composition storable without gelation at 60° for >30 days was prepared from p-vinylphenol-Me methacrylate copolymer 10, 10:6 (equiv) EPPN 201 acrylate 95, trimethylolpropane dipropoxytriacrylate 7, carbitol acrylate 7, benzyl di-Me ketal 0.5, and butyl Cellosolve acetate 23 parts, screen-printed 20-50 μm-thick on printed circuit board with through holes, dried or 70° for 60 min, exposed to **UV** lamp via neg. film, developed with trichloroethylene, and cured at 80° for 30

min to give a solder- and solvent-resistant coating with good adhesion and insulation resistance 9 + 1012 Ω.

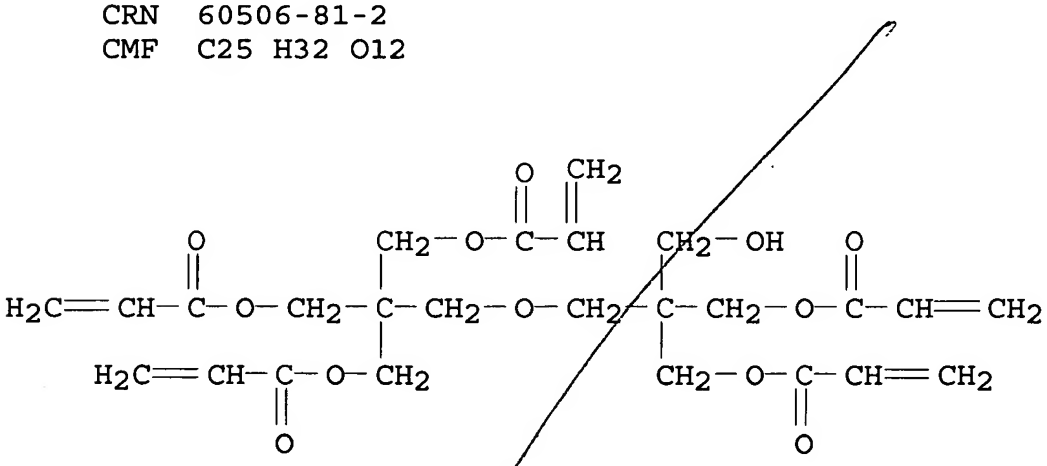
IT **122269-30-1**
RL: USES (Uses)
(solder **resists** containing, heat- and chemical-resistant, storable, for printed circuit board manufacture)

RN 122269-30-1 HCAPLUS

CN 2-Propenoic acid, 2-[[3-hydroxy-2,2-bis[[(1-oxo-2-propenyl)oxy]methyl]propoxy]methyl]-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester, polymer with EPPN 201 2-propenoate, 4-ethenylphenol and 2-[[3-[(1-oxo-2-propenyl)oxy]-2,2-bis[[(1-oxo-2-propenyl)oxy]methyl]propoxy]methyl]-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl di-2-propenoate (9CI) (CA INDEX NAME)

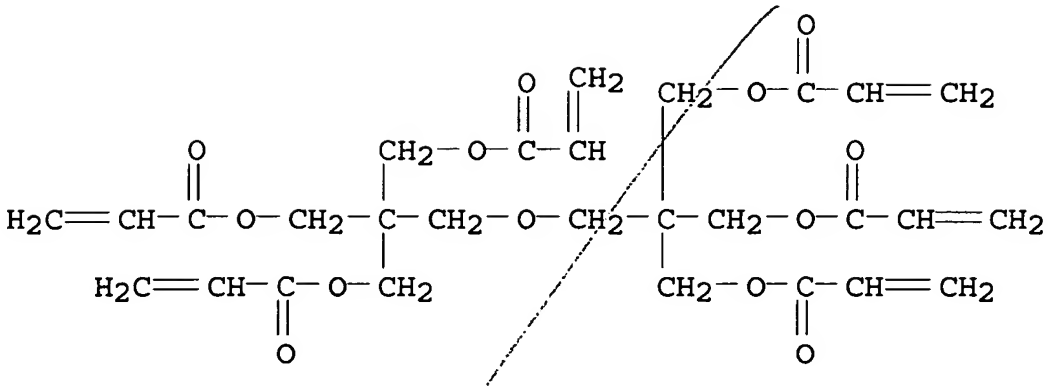
CM 1

CRN 60506-81-2
CMF C25 H32 O12



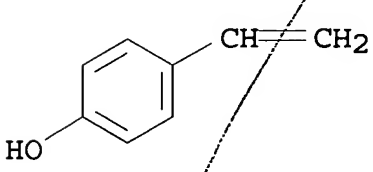
CM 2

CRN 29570-58-9
CMF C28 H34 O13



CM 3

CRN 2628-17-3
CMF C8 H8 O



CM 4

CRN 114100-29-7
CMF C3 H4 O2 . x Unspecified

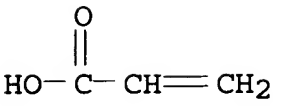
CM 5

CRN 81775-74-8
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 6

CRN 79-10-7
CMF C3 H4 O2



IC ICM C08F299-02
ICS C08F002-48; C08F291-00
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
IT **Crosslinking** catalysts
(photochem., benzyl di-Me ketal and precursors, for solder resists containing vinylphenol polymer and epoxy resin acrylates)
IT 24650-42-8 32760-43-3 57835-99-1, Triphenylsulfonium hexafluorophosphate 57840-38-7, Triphenylsulfonium hexafluoroantimonate
RL: CAT (Catalyst use); USES (Uses)
(**crosslinking** catalysts, in solder resists containing vinylphenol polymers and epoxy resin acrylates)
IT 122269-26-5 122269-27-6 **122269-30-1** 122269-31-2
RL: USES (Uses)
(solder **resists** containing, heat- and chemical-resistant, storable, for printed circuit board manufacture)

L41 ANSWER 19 OF 32 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1989:222622 HCAPLUS
DOCUMENT NUMBER: 110:222622
TITLE: Highly light-sensitive polymer compositions for photoresists
INVENTOR(S): Nagasaka, Hideki; Ota, Katsuko
PATENT ASSIGNEE(S): Mitsubishi Kasei Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 63213503	A2	19880906	JP 1987-44973	1987 0227

JP 07103164 B4 19951108
PRIORITY APPLN. INFO.: JP 1987-44973 1987 0227

GI For diagram(s), see printed CA Issue.

AB The compns. comprise unsatd. compds., sensitizers I [A = benzene or naphthalene ring; B = (heterocyclic) aromatic ring; X and/or Y = NR1R2; R1,R2 alkyl; l, m, n = 0,1], and radical initiators. Thus, mixing Me methacrylate-methacrylic acid copolymer 10, trimethylolpropane triacrylate 10, methoxyphenol 0.060, Victoria Pure Blue BOH 0.060, and MEK 180 g prepared a mixture which was mixed with 2.5 phr 6-diethylaminobenzofuran-2-yl 4'-dimethylaminophenyl **ketone**, and 5 phr PH2I+.PF6-, spread on an Al plate, dried, coated with a 3-μm poly(vinyl alc.) layer on top, covered with a mask, and irradiated with **UV** light at 1-mm distance for 6 s to give a cured product with sensitiveness ranking 10 (10 is best, 0 is worse), vs. 0 without the **ketone** sensitizer.

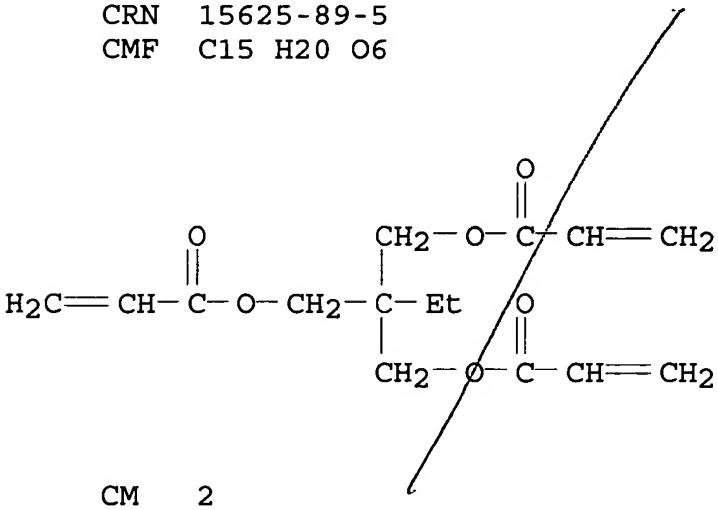
IT **112077-50-6**
RL: USES (Uses)
(**photoresists**, containing benzofuranyl Ph **ketone** sensitizers, high-sensitivity)

RN 112077-50-6 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, polymer with 2-ethyl-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl di-2-propenoate and methyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

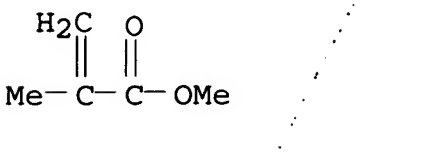
CM 1

CRN 15625-89-5
CMF C15 H20 O6



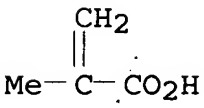
CM 2

CRN 80-62-6
CMF C5 H8 O2



CM 3

CRN 79-41-4
CMF C4 H6 O2



IC ICM C08F002-48
ICS G03C001-68
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 37, 42
ST light sensitive resin radical initiator; photoresist sensitizer benzofuranyl phenyl **ketone**
IT Resists
(photo-, acrylic, benzofuranyl Ph **ketone** sensitizers for)
IT **Crosslinking** catalysts
(photosensitizers, benzofuranyl Ph **ketones**, for acrylic resists)
IT **112077-50-6**
RL: USES (Uses)
(**photoresists**, containing benzofuranyl Ph **ketone** sensitizers, high-sensitivity)
IT 149-30-4, 2(3H)-Benzothiazolethione 1707-68-2 6542-67-2
17292-56-7 33943-20-3 58109-40-3
RL: USES (Uses)
(radical initiators, for acrylic compns. containing benzofuranyl Ph **ketone** photosensitizers)

L41 ANSWER 20 OF 32 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1989:25483 HCAPLUS
DOCUMENT NUMBER: 110:25483
TITLE: Photocurable urethane (meth)acrylate solder resists
INVENTOR(S): Setthachayanon, Songvit
PATENT ASSIGNEE(S): Armstrong World Industries, Inc., USA
SOURCE: Ger. Offen., 13 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 3741385	A1	19880609	DE 1987-3741385	19871207
DE 3741385	C2	19960605		
CA 1332093	A1	19940920	CA 1987-550900	19871103
NL 8702942	A	19880701	NL 1987-2942	19871207
NL 190785	B	19940316		
NL 190785	C	19940816		
FR 2607820	A1	19880610	FR 1987-17087	19871208
FR 2607820	B1	19940610		
CN 87107321	A	19880622	CN 1987-107321	19871208
CN 1031227	B	19960306		
JP 63156870	A2	19880629	JP 1987-308828	19871208
JP 01041185	B4	19890904		
GB 2199335	A1	19880706	GB 1987-28631	19871208
GB 2199335	B2	19910109		

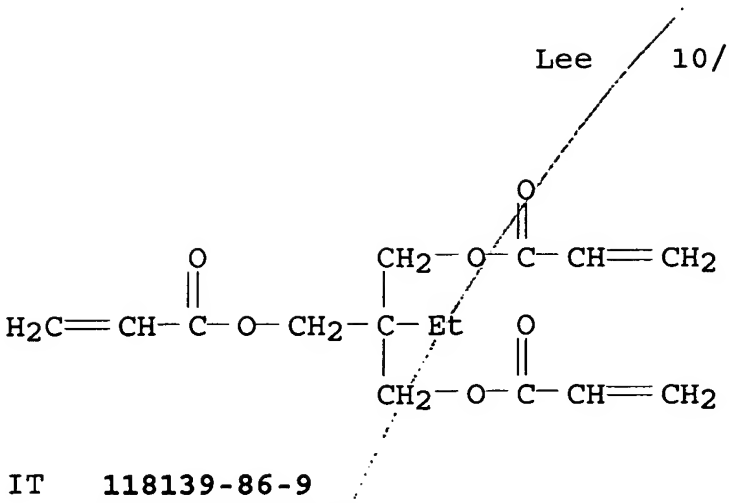
BR 8706609	A	19880719	BR 1987-6609	1987 1208
CH 680622	A	19920930	CH 1987-4773	1987 1208
PRIORITY APPLN. INFO.:			US 1986-939604	A 1986 1208
			US 1987-45464	A 1987 0504

AB The title resists, resistant to organic solvents but removable by alkalies, contain polymers prepared from diisocyanates 30-80, **carboxylic acids** bearing 2-5 OH groups 5-45, and hydroxyalkyl di- or tri(meth)acrylates 5-50%. A polyurethane acrylate was prepared from 1,6-hexanediol 4, dimethylolpropionic acid 4, 2-hydroxyethyl acrylate 8.2, and trimethylhexamethylene diisocyanate 16 equiv in 784 g N-methylpyrrolidone (I) and mixed (77.5 g) with maleic anhydride-styrene copolymer iso-Bu **ester** 82.0, trimethylolpropane triacrylate 47.8, isopropylthioxanthone 6.5, p-Me2NC6H4CO2Et 8.4, antifoam 6.5, phenothiazine 0.004, green dye 9.0, and I 91.25 g. This composition was coated on a Cu-plated epoxy resin board, dried, cured through a neg. by **UV**, developed with 1% aqueous K2CO3, cured, and post-cured to give a CH2Cl2-resistant mask resisting molten solder (260-275°).

IT **15625-89-5**, Trimethylolpropane triacrylate
RL: MOA (Modifier or additive use); USES (Uses)
(**crosslinking** agents, for polyurethane acrylate solder **resists**, photocurable and alkali-removable)

RN 15625-89-5 HCAPLUS

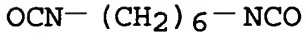
CN 2-Propenoic acid, 2-ethyl-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester (9CI) (CA INDEX NAME)



IT **118139-86-9**
RL: USES (Uses)
(solder **resists**, photocurable and alkali-removable)
RN 118139-86-9 HCAPLUS
CN 2-Propenoic acid, 2-ethyl-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester, polymer with 1,6-diisocyanatotrimethylhexane, 1,6-hexanediol, 2-hydroxyethyl 2-propenoate and 3-hydroxy-2-(hydroxymethyl)-2-methylpropanoic acid (9CI) (CA INDEX NAME)

CM 1

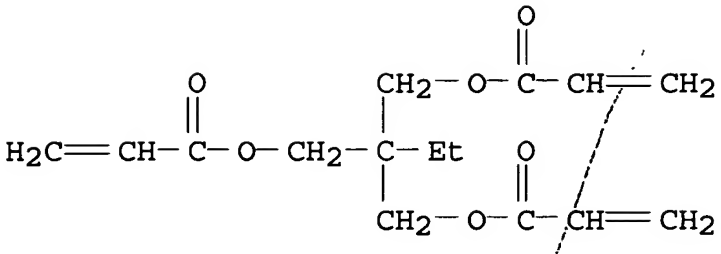
CRN 28679-16-5
CMF C11 H18 N2 O2
CCI IDS



3 (D1—Me)

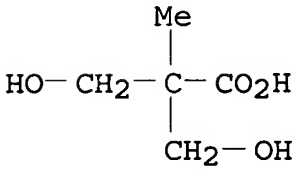
CM 2

CRN 15625-89-5
CMF C15 H20 O6



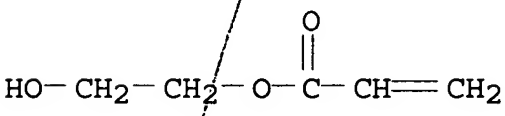
CM 3

CRN 4767-03-7
CMF C5 H10 O4



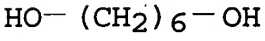
CM 4

CRN 818-61-1
CMF C5 H8 O3



CM 5

CRN 629-11-8
CMF C6 H14 O2



IC ICM C08G018-34
ICS C08L075-04; C09D003-72; C09D003-80; G03F007-10; H05K003-34
ICA C08J003-28; C09D003-74; C09D007-00; H05K003-28
ICI C08J003-24, C08L075-04
CC 42-10 (Coatings, Inks, and Related Products)
Section cross-reference(s): 74, 76
ST solder resist photocurable; polyurethane acrylate solder resist; **crosslinking** agent solder resist; trimethylolpropane acrylate **crosslinker**; developer alkali solder resist
IT **15625-89-5**, Trimethylolpropane triacrylate
RL: MOA (Modifier or additive use); USES (Uses)
(**crosslinking** agents, for polyurethane acrylate solder **resists**, photocurable and alkali-removable)
IT 4098-71-9D, polymers with polycaprolactone triol, dimethylolpropionic acid and trimethylolpropane triacrylate 4767-03-7D, polymers with IPDI, polycaprolactone triol and trimethylolpropane triacrylate 24980-41-4D, Caprolactone polymer, triol derivs., polymers with IPDI, dimethylolpropionic acid, and trimethylolpropane triacrylate 25248-42-4D, Polycaprolactone, SRU, triol derivs., polymers with IPDI, dimethylolpropionic acid, and trimethylolpropane triacrylate **118139-86-9** 118244-07-8
RL: USES (Uses)
(solder **resists**, photocurable and alkali-removable)

L41 ANSWER 21 OF 32 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1989:8801 HCAPLUS
DOCUMENT NUMBER: 110:8801
TITLE: 2,2-Dimethylolalkanoic acid (meth)acrylates
INVENTOR(S): Jinbo, Shinichiro; Ito, Yukiyoshi; Yumino, Yasuhisa
PATENT ASSIGNEE(S): Kyowa Hakko Kogyo Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 63099038	A2	19880430	JP 1987-5654	1987

0113

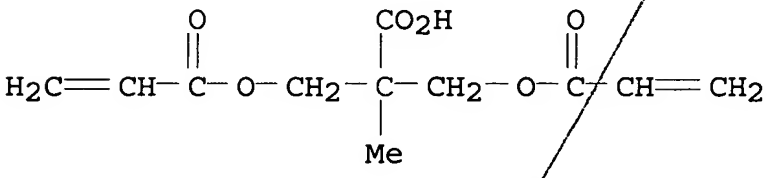
JP 07010795 B4 19950208
PRIORITY APPLN. INFO.: JP 1986-127718 A1
1986
0602

OTHER SOURCE(S): CASREACT 110:8801; MARPAT 110:8801

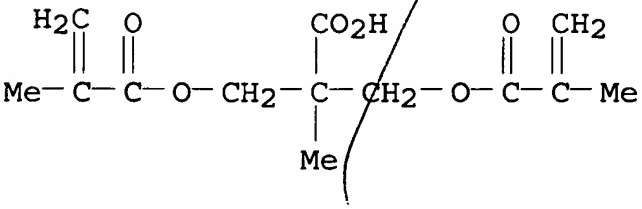
AB The **esters** RCH(CH2OCOCR1:CH2)2CO2H [R = C1-3 alkyl; R1 = H, Me] are **crosslinking** agents for **UV** resists with good miscibility. Stirring 80.5 g 2,2-dimethylolpropionic acid (I) and 119 g acryloyl chloride with Et3N at 0-5° for 2 h gave 118.7 g I diacrylate.

IT **118063-70-0 118063-71-1**
RL: MOA (Modifier or additive use); USES (Uses)
(**crosslinking** agents, for **photoresists**, manufacture of)

RN 118063-70-0 HCAPLUS
CN 2-Propenoic acid, 2-carboxy-2-methyl-1,3-propanediyl ester (9CI) (CA INDEX NAME)



RN 118063-71-1 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 2-carboxy-2-methyl-1,3-propanediyl ester (9CI) (CA INDEX NAME)



IC ICM C07C069-54
ICS C08F020-28
CC 35-2 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 23
ST acrylate dimethylolalkanoic acid **crosslinker**;

dimethylolpropionic acid diacrylate **crosslinker**; photoresist **crosslinking** agent; methacrylate dimethylolalkanoic acid **crosslinker**; resist **UV crosslinking** agent

IT **Crosslinking** agents
(dimethylolalkanoic acid (meth)acrylates, for photoresists)

IT Resists
(photo-, **crosslinking** agents for, dimethylolalkanoic acid (meth)acrylates as)

IT **118063-70-0 118063-71-1**
RL: MOA (Modifier or additive use); USES (Uses)
(**crosslinking** agents, for **photoresists**, manufacture of)

L41 ANSWER 22 OF 32 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1988:205939 HCAPLUS
DOCUMENT NUMBER: 108:205939
TITLE: Light-sensitive resin compositions for printed circuit board resists
INVENTOR(S): Yokoyama, Yasuaki; Fukuhara, Seiji; Ikeda, Hiroharu
PATENT ASSIGNEE(S): Japan Synthetic Rubber Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 62277422	A2	19871202	JP 1986-120057	19860527
PRIORITY APPLN. INFO.:			JP 1986-120057	19860527

AB The title compns. with good elec. and mech. property, heat resistance, and interlayer adhesion to substrates comprise epoxidized resins (prepared by epoxidizing reaction products of halo- and/or alkyl-containing phenols and aldehydes) 5-60, unsatd. **carboxylic acid**-modified epoxidized resins 20-75, ≥1 epoxy compound (other than the epoxidized resins)

0.01-45.0, catalysts 0.01-10.0, and photopolymn. initiators 0.001-15%. Thus, a mixture of epoxy resin (EOCN-102) 15, BREN 15, reaction products of EOCN 102S and mono(β-acryloyloxyethyl) phthalate 35, poly(Me methacrylate) 5, triglycidyl isocyanurate 10, trimethylolpropane triacrylate 10, Aronix 10, benzoin dimethylketal 3, N-nitrosophenylhydroxylamine Al salts 0.03, Epi-cure 147 9, benzimidazole 0.25, and Diaresin Green C 0.25 part was coated on a substrate and dried 30 min at 80° to give a 70-μ layer having good developed figures after exposed to 1 J/cm2 **UV** radiation and developed 3 min with chlorothene.

IT **114481-98-0 114481-99-1 114482-00-7 114482-01-8 114482-02-9 114482-03-0 114482-04-1 114482-05-2 114592-89-1 114592-90-4 114592-91-5**
RL: TEM (Technical or engineered material use); USES (Uses) (light-sensitive **resists**, for printed circuit boards)

RN 114481-98-0 HCAPLUS

CN 1,2-Benzenedicarboxylic acid, mono[2-[(1-oxo-2-propenyl)oxy]ethyl] ester, polymer with EOCN 102, EOCN 102S, 2-ethyl-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl di-2-propenoate, 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane], methyl 2-methyl-2-propenoate and (2,4,6-trioxo-1,3,5-triazine-1,3,5(2H,4H,6H)-triyl)tri-2,1-ethanediyl tri-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 80111-79-1
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

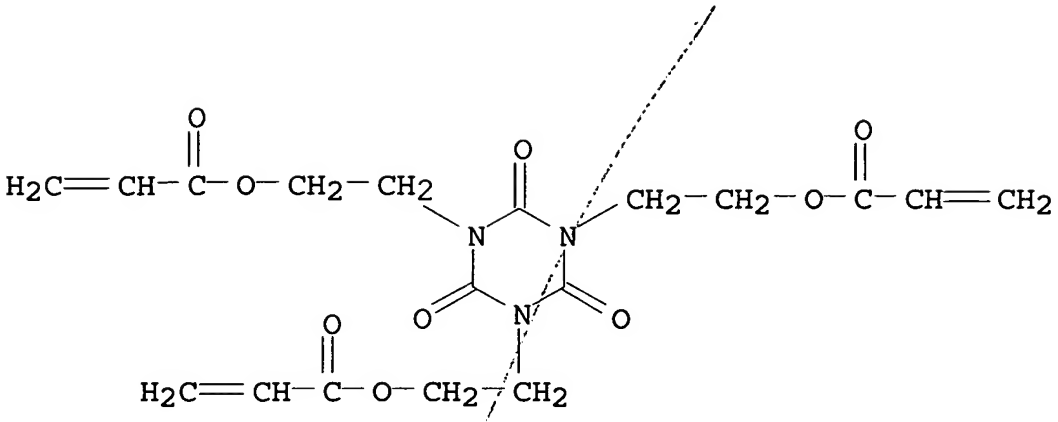
CM 2

CRN 71343-77-6
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

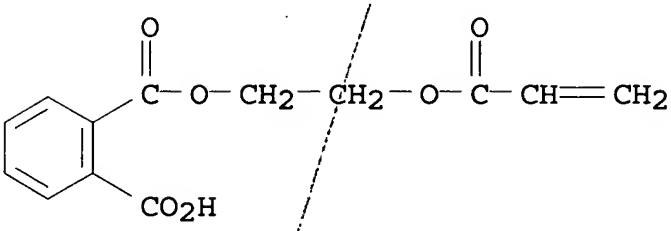
CM 3

CRN 40220-08-4
CMF C18 H21 N3 O9



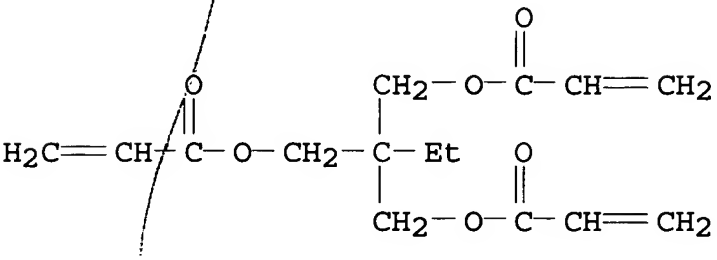
CM 4

CRN 30697-40-6
CMF C13 H12 O6



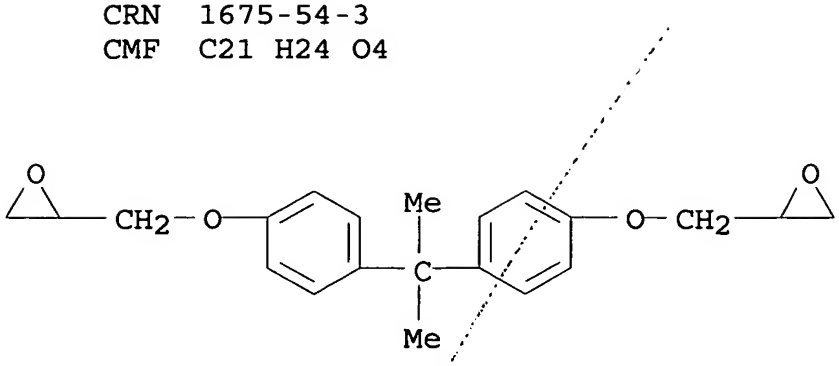
CM 5

CRN 15625-89-5
CMF C15 H20 O6



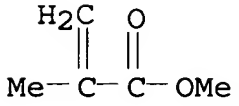
CM 6

CRN 1675-54-3
CMF C21 H24 O4



CM 7

CRN 80-62-6
CMF C5 H8 O2



RN 114481-99-1 HCAPLUS
CN 1,2-Benzenedicarboxylic acid, mono[2-[(1-oxo-2-propenyl)oxy]ethyl] ester, polymer with (chloromethyl)oxirane, EOCN 102S, 2-ethyl-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl di-2-propenoate, 4,4'-(1-methylethylidene)bis[phenol], 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane], methyl 2-methyl-2-propenoate and (2,4,6-trioxo-1,3,5-triazine-1,3,5(2H,4H,6H)-triyl)tri-2,1-ethanediyl tri-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 80111-79-1
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

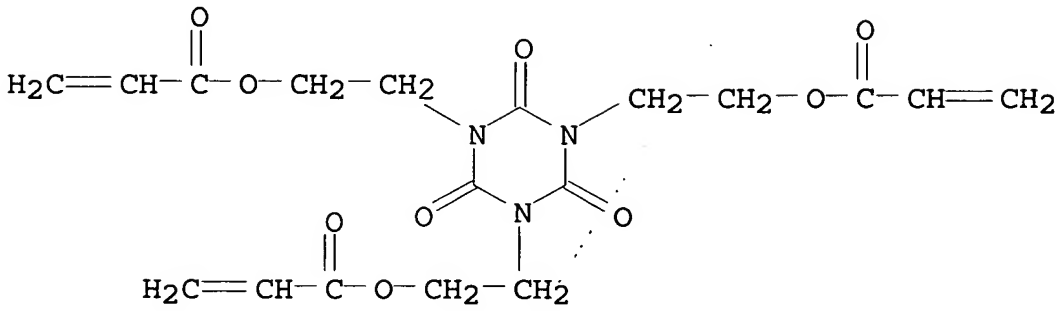
CM 2

CRN 71343-77-6
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

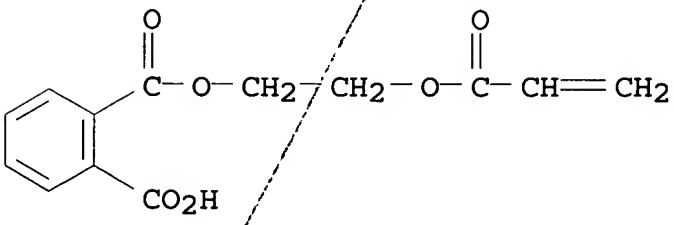
CM 3

CRN 40220-08-4
CMF C18 H21 N3 O9



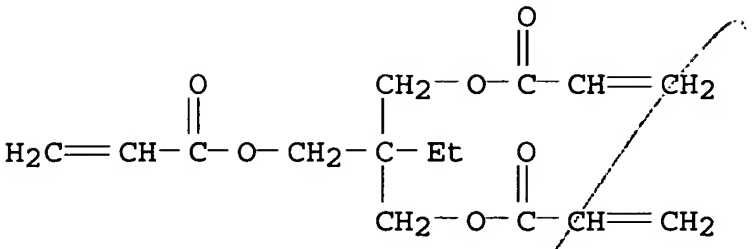
CM 4

CRN 30697-40-6
CMF C13 H12 O6



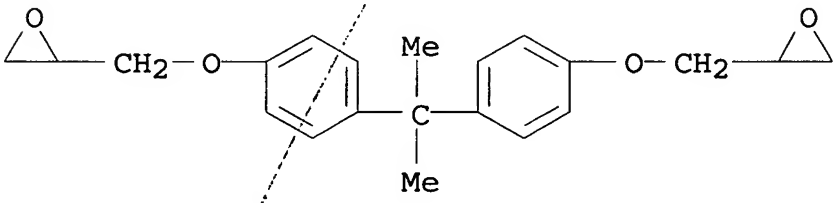
CM 5

CRN 15625-89-5
CMF C15 H20 O6



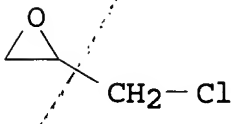
CM 6

CRN 1675-54-3
CMF C21 H24 O4



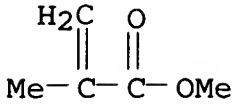
CM 7

CRN 106-89-8
CMF C3 H5 Cl O



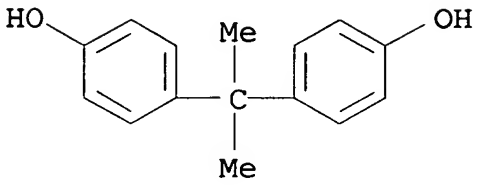
CM 8

CRN 80-62-6
CMF C5 H8 O2



CM 9

CRN 80-05-7
CMF C15 H16 O2



RN 114482-00-7 HCAPLUS
CN 1,2-Benzenedicarboxylic acid, mono[2-[(1-oxo-2-propenyl)oxy]ethyl] ester, polymer with EOCN 102, EOCN 102S, 2-ethyl-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl di-2-propenoate, 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane], methyl 2-methyl-2-propenoate, (2,4,6-trioxo-1,3,5-triazine-1,3,5(2H,4H,6H)-triyl)tri-2,1-ethanediyl tri-2-propenoate and 1,3,5-tris(oxiranylmethyl)-1,3,5-triazine-2,4,6(1H,3H,5H)-trione (9CI) (CA INDEX NAME)

CM 1

CRN 80111-79-1
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

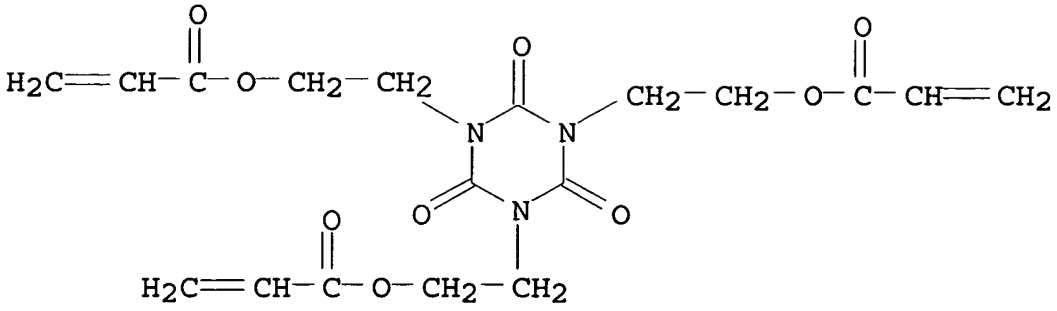
CM 2

CRN 71343-77-6
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

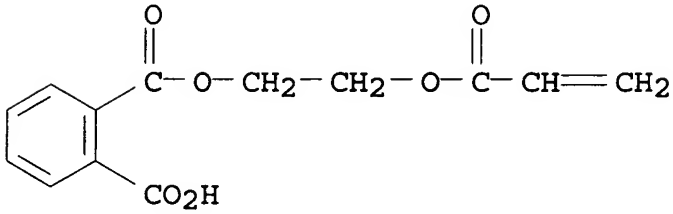
CM 3

CRN 40220-08-4
CMF C18 H21 N3 O9



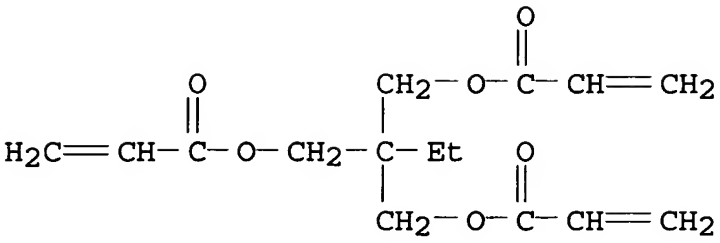
CM 4

CRN 30697-40-6
CMF C13 H12 O6



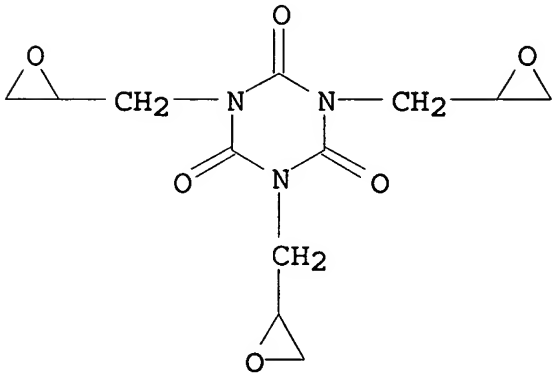
CM 5

CRN 15625-89-5
CMF C15 H20 O6



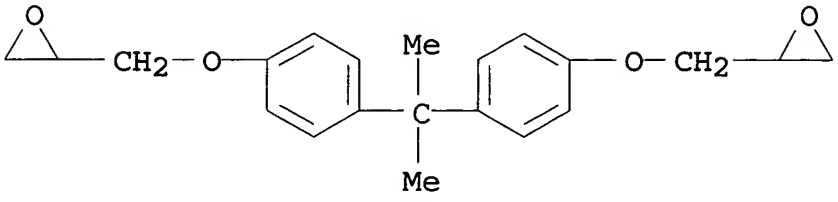
CM 6

CRN 2451-62-9
CMF C12 H15 N3 O6



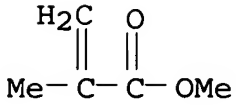
CM 7

CRN 1675-54-3
CMF C21 H24 O4



CM 8

CRN 80-62-6
CMF C5 H8 O2



RN 114482-01-8 HCAPLUS
CN 2-Propenoic acid, (2,4,6-trioxo-1,3,5-triazine-1,3,5(2H,4H,6H)-triyl)tri-2,1-ethanediyl ester, polymer with EOCN 102, 2-ethyl-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl di-2-propenoate, 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane], methyl 2-methyl-2-propenoate and 2-methyl-2-propenoic acid (9CI) (CA INDEX NAME)

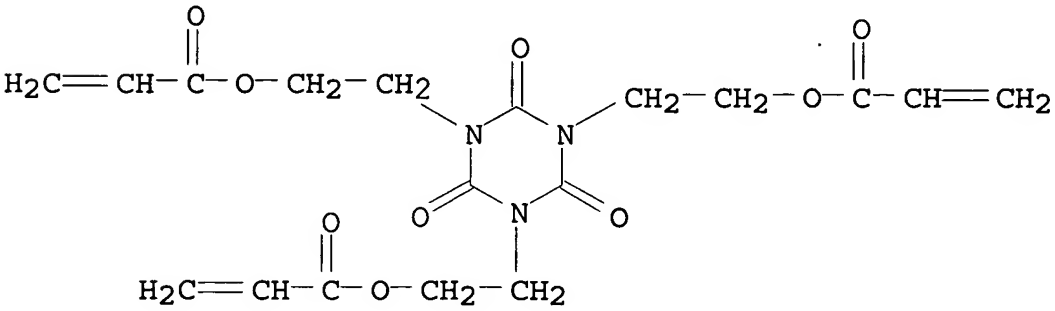
CM 1

CRN 71343-77-6
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

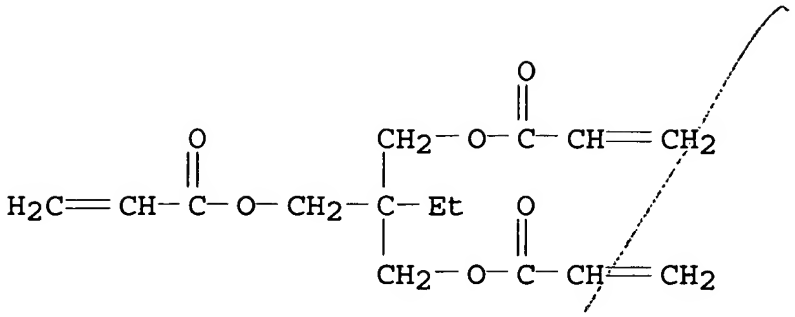
CM 2

CRN 40220-08-4
CMF C18 H21 N3 O9



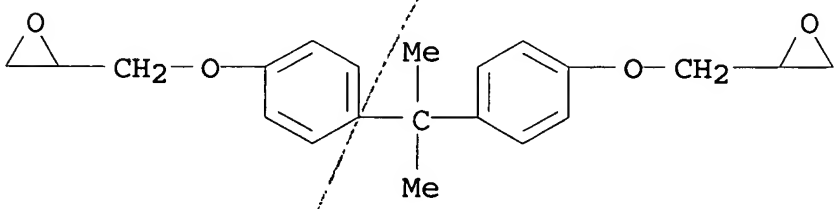
CM 3

CRN 15625-89-5
CMF C15 H20 O6



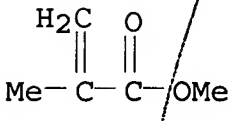
CM 4

CRN 1675-54-3
CMF C21 H24 O4



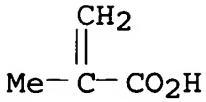
CM 5

CRN 80-62-6
CMF C5 H8 O2



CM 6

CRN 79-41-4
CMF C4 H6 O2



RN 114482-02-9 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, polymer with (chloromethyl)oxirane, EOCN 102, 2-ethyl-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl di-2-propenoate, 4,4'-(1-methylethylidene)bis[phenol], 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane], methyl 2-methyl-2-propenoate and (2,4,6-trioxo-1,3,5-triazine-1,3,5(2H,4H,6H)-triyl)tri-2,1-ethanediyl tri-2-propenoate (9CI) (CA INDEX NAME)

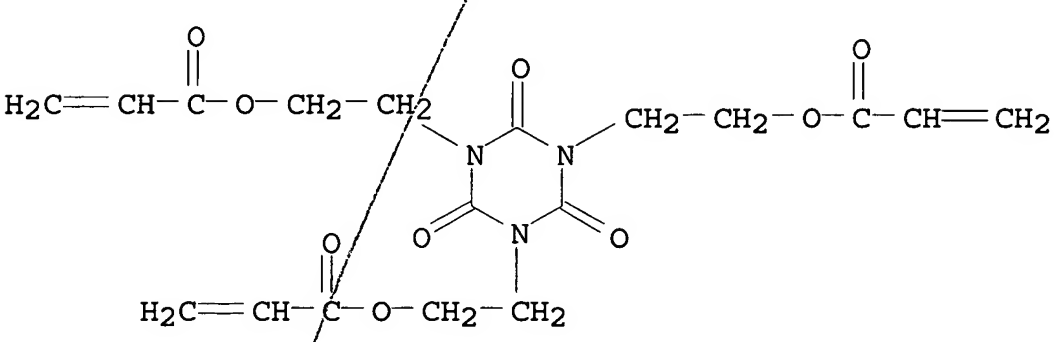
CM 1

CRN 71343-77-6
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

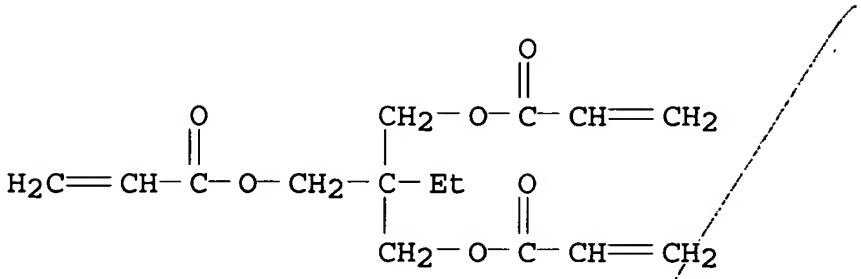
CM 2

CRN 40220-08-4
CMF C18 H21 N3 O9



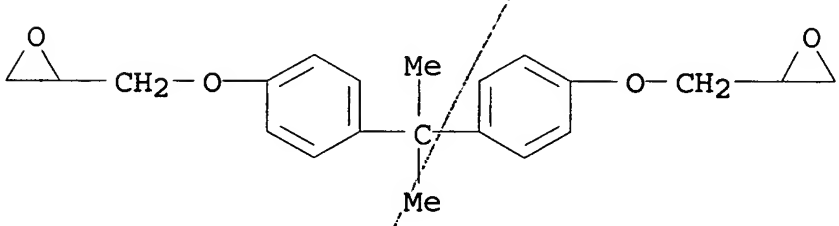
CM 3

CRN 15625-89-5
CMF C15 H20 O6



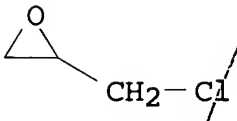
CM 4

CRN 1675-54-3
CMF C21 H24 O4



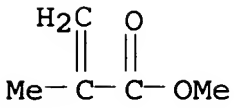
CM 5

CRN 106-89-8
CMF C3 H5 Cl O



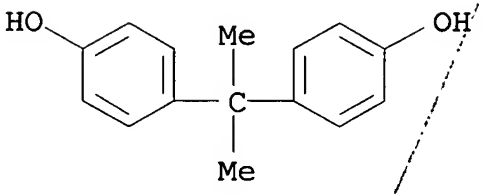
CM 6

CRN 80-62-6
CMF C5 H8 O2



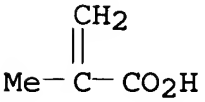
CM 7

CRN 80-05-7
CMF C15 H16 O2



CM 8

CRN 79-41-4
CMF C4 H6 O2



RN 114482-03-0 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, polymer with EOCN 102, 2-ethyl-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl di-2-propenoate, 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane], methyl 2-methyl-2-propenoate, (2,4,6-trioxo-1,3,5-triazine-1,3,5(2H,4H,6H)-triyl)tri-2,1-ethanediyl tri-2-propenoate and 1,3,5-tris(oxiranylmethyl)-1,3,5-triazine-2,4,6(1H,3H,5H)-trione (9CI) (CA INDEX NAME)

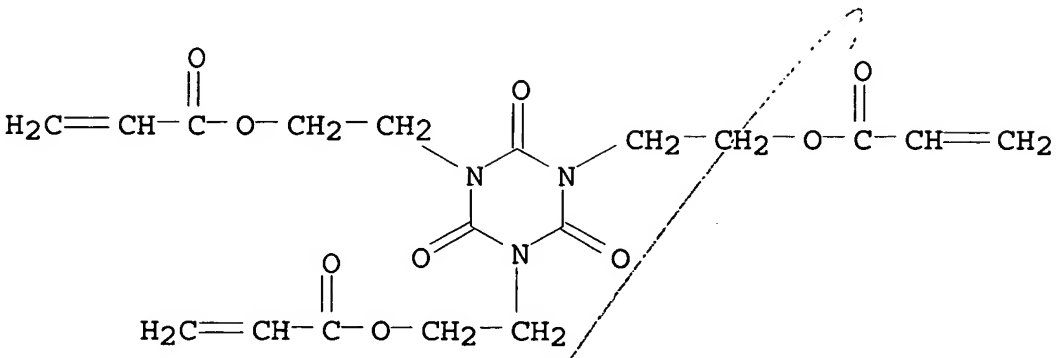
CM 1

CRN 71343-77-6
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

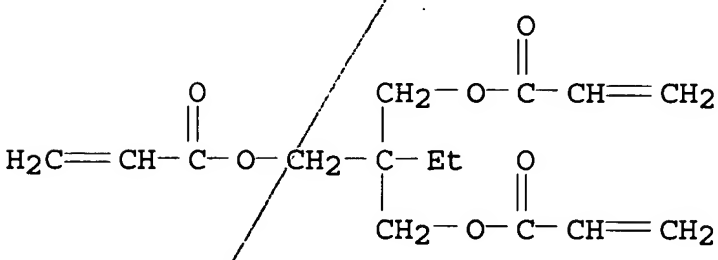
CM 2

CRN 40220-08-4
CMF C18 H21 N3 O9



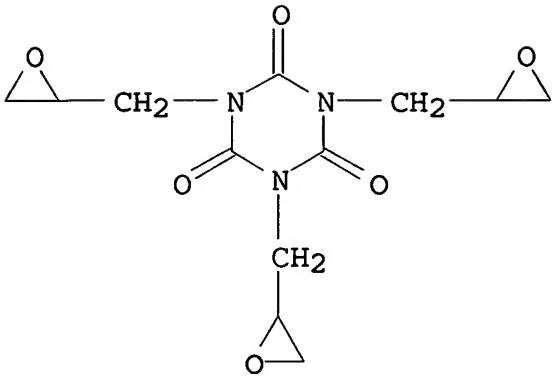
CM 3

CRN 15625-89-5
CMF C15 H20 O6



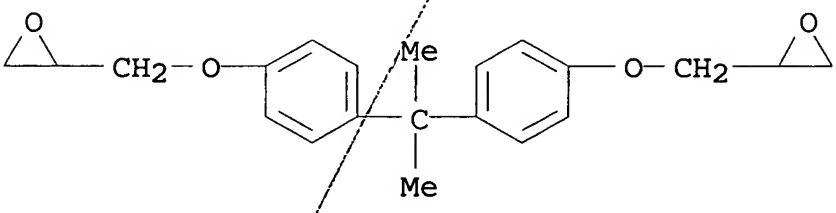
CM 4

CRN 2451-62-9
CMF C12 H15 N3 O6



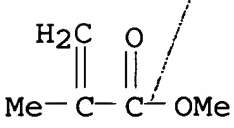
CM 5

CRN 1675-54-3
CMF C21 H24 O4



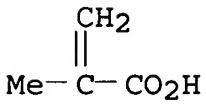
CM 6

CRN 80-62-6
CMF C5 H8 O2



CM 7

CRN 79-41-4
CMF C4 H6 O2



RN 114482-04-1 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, polymer with BREN, (chloromethyl)oxirane, EOCN 102, 2-ethyl-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl di-2-propenoate, 4,4'-(1-methylethylidene)bis[phenol], 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane], methyl 2-methyl-2-propenoate and (2,4,6-trioxo-1,3,5-triazine-1,3,5(2H,4H,6H)-triyl)tri-2,1-ethanediyl tri-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 71343-77-6
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

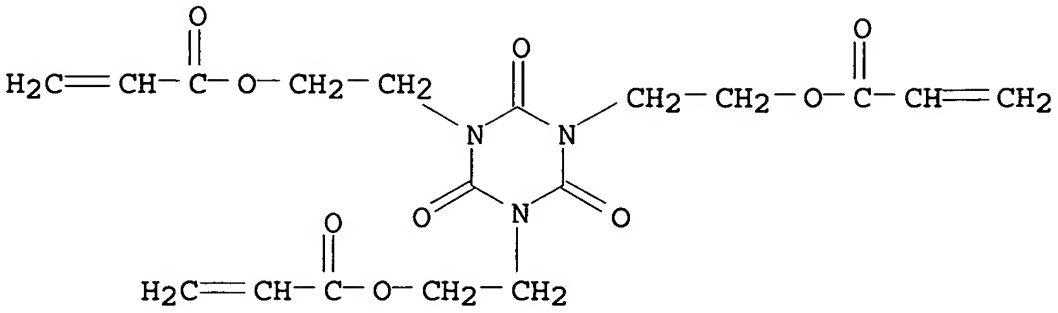
CM 2

CRN 68859-34-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

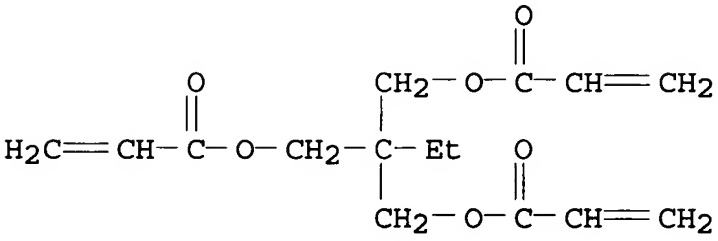
CM 3

CRN 40220-08-4
CMF C18 H21 N3 O9



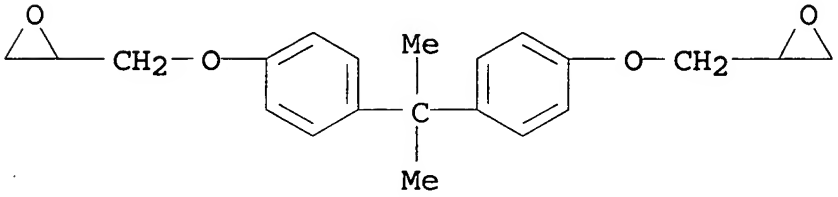
CM 4

CRN 15625-89-5
CMF C15 H20 O6



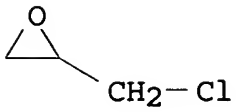
CM 5

CRN 1675-54-3
CMF C21 H24 O4



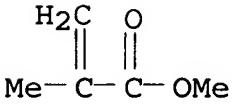
CM 6

CRN 106-89-8
CMF C3 H5 Cl O



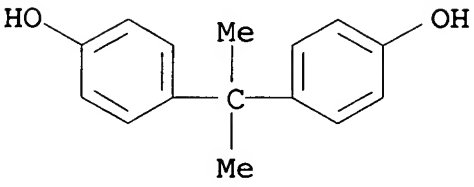
CM 7

CRN 80-62-6
CMF C5 H8 O2



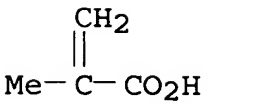
CM 8

CRN 80-05-7
CMF C15 H16 O2



CM 9

CRN 79-41-4
CMF C4 H6 O2



RN 114482-05-2 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, polymer with BREN, EOCN 102, 2-ethyl-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl di-2-propenoate, 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane], methyl 2-methyl-2-propenoate, (2,4,6-trioxo-1,3,5-triazine-1,3,5(2H,4H,6H)-triyl)tri-2,1-ethanediyl tri-2-propenoate and 1,3,5-tris(oxiranylmethyl)-1,3,5-triazine-2,4,6(1H,3H,5H)-trione (9CI) (CA INDEX NAME)

CM 1

CRN 71343-77-6
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

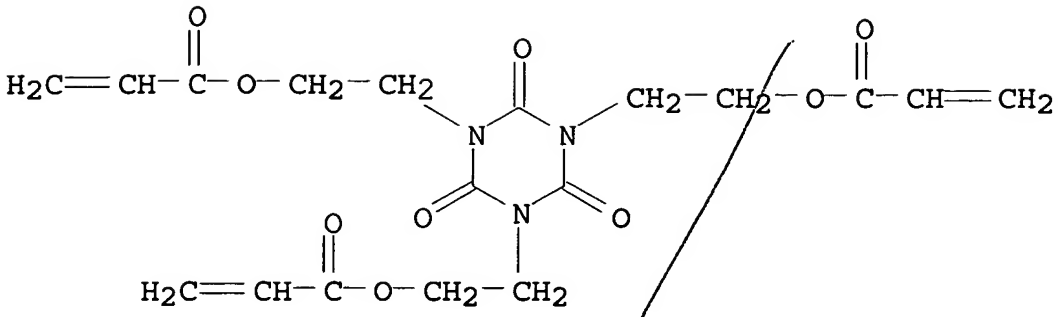
CM 2

CRN 68859-34-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

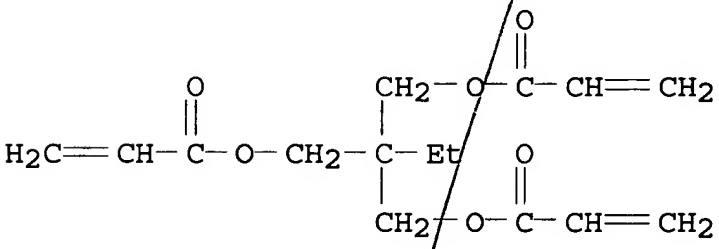
CM 3

CRN 40220-08-4
CMF C18 H21 N3 O9



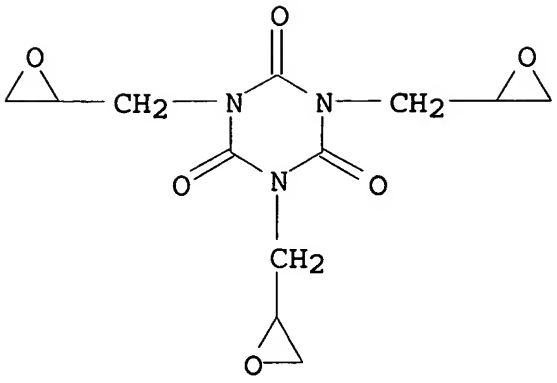
CM 4

CRN 15625-89-5
CMF C15 H20 O6



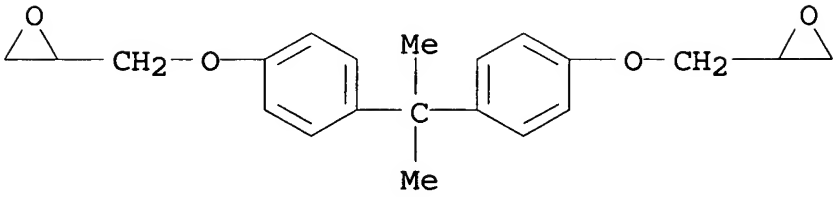
CM 5

CRN 2451-62-9
CMF C12 H15 N3 O6



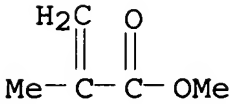
CM 6

CRN 1675-54-3
CMF C21 H24 O4



CM 7

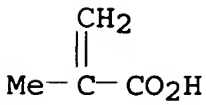
CRN 80-62-6
CMF C5 H8 O2



CM 8

CRN 79-41-4

CMF C4 H6 O2



RN 114592-89-1 HCAPLUS
CN 1,2-Benzenedicarboxylic acid, mono[2-[(1-oxo-2-propenyl)oxy]ethyl] ester, polymer with BREN, EOCN 102, EOCN 102S, Epicure 147, 2-ethyl-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl di-2-propenoate, methyl 2-methyl-2-propenoate, (2,4,6-trioxo-1,3,5-triazine-1,3,5(2H,4H,6H)-triyl)tri-2,1-ethanediyl tri-2-propenoate and 1,3,5-tris(oxiranylmethyl)-1,3,5-triazine-2,4,6(1H,3H,5H)-trione (9CI) (CA INDEX NAME)

CM 1

CRN 114512-72-0
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 80111-79-1
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 3

CRN 71343-77-6
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 4

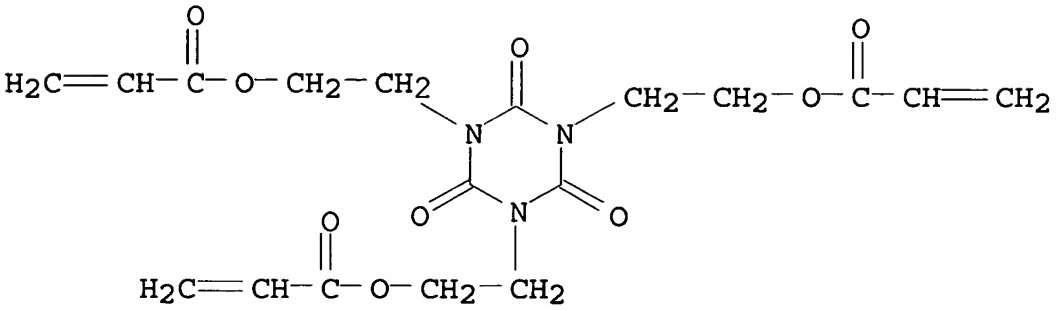
CRN 68859-34-7
CMF Unspecified

CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

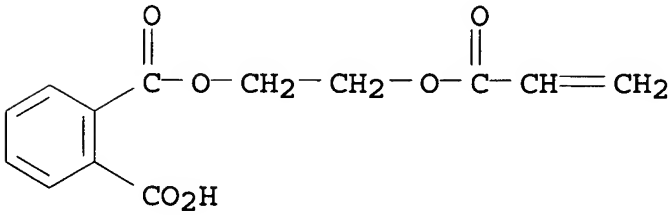
CM 5

CRN 40220-08-4
CMF C18 H21 N3 O9



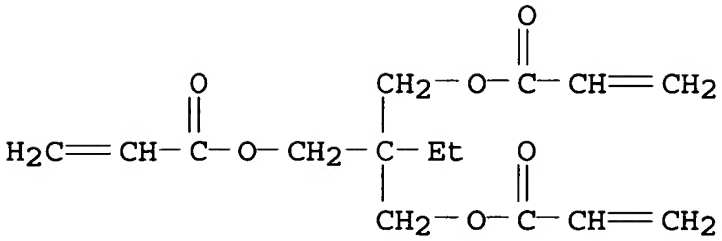
CM 6

CRN 30697-40-6
CMF C13 H12 O6



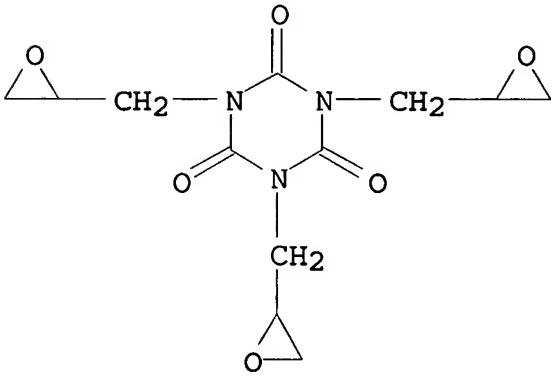
CM 7

CRN 15625-89-5
CMF C15 H20 O6



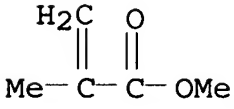
CM 8

CRN 2451-62-9
CMF C12 H15 N3 O6



CM 9

CRN 80-62-6
CMF C5 H8 O2



RN 114592-90-4 HCAPLUS
CN 1,2-Benzenedicarboxylic acid, mono[2-[(1-oxo-2-propenyl)oxy]ethyl] ester, polymer with BREN, EOCN 102, EOCN 102S, Epicure 147,

2-ethyl-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl di-2-propenoate, 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane], methyl 2-methyl-2-propenoate, (2,4,6-trioxo-1,3,5-triazine-1,3,5(2H,4H,6H)-triyl)tri-2,1-ethanediyl tri-2-propenoate and 1,3,5-tris(oxiranylmethyl)-1,3,5-triazine-2,4,6(1H,3H,5H)-trione (9CI) (CA INDEX NAME)

CM 1

CRN 114512-72-0
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 80111-79-1
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 3

CRN 71343-77-6
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

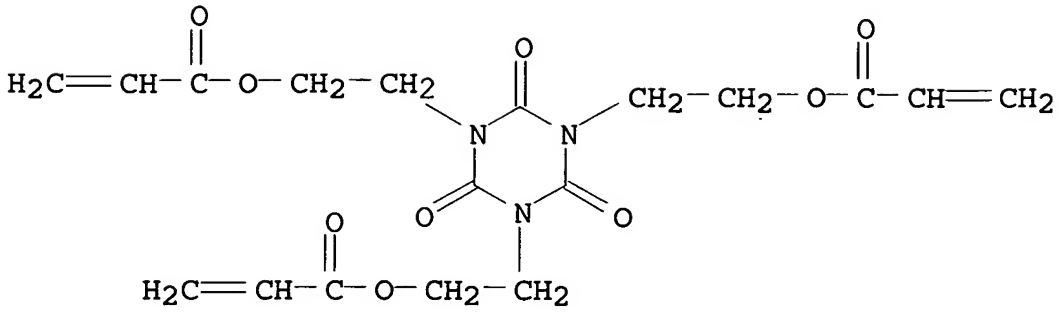
CM 4

CRN 68859-34-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

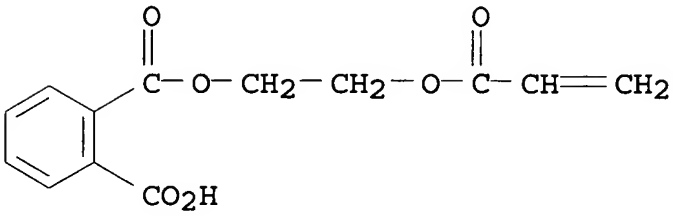
CM 5

CRN 40220-08-4
CMF C18 H21 N3 O9



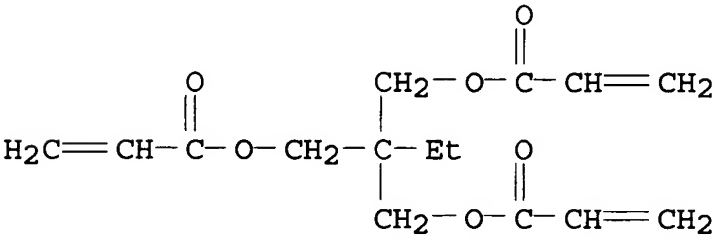
CM 6

CRN 30697-40-6
CMF C13 H12 O6



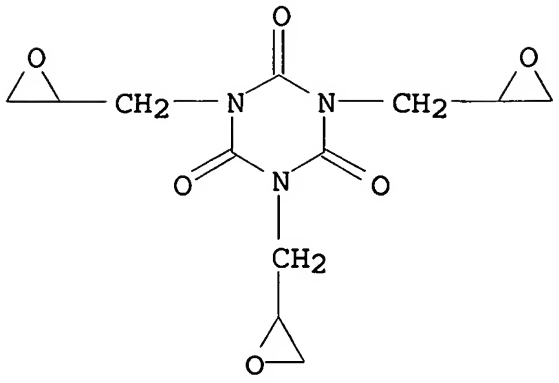
CM 7

CRN 15625-89-5
CMF C15 H20 O6



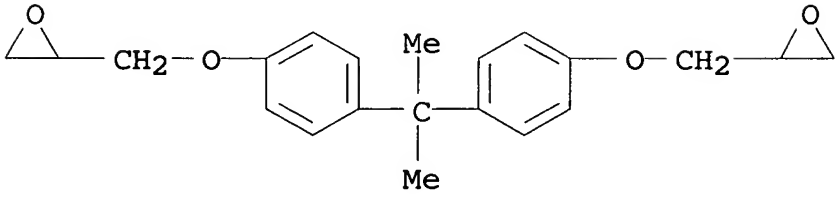
CM 8

CRN 2451-62-9
CMF C12 H15 N3 O6



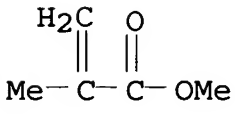
CM 9

CRN 1675-54-3
CMF C21 H24 O4



CM 10

CRN 80-62-6
CMF C5 H8 O2



RN 114592-91-5 HCAPLUS

CN 1,2-Benzenedicarboxylic acid, mono[2-[(1-oxo-2-propenyl)oxy]ethyl] ester, polymer with BREN, (chloromethyl)oxirane, EOCN 102, EOCN 102S, Epicure 147, 2-ethyl-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl di-2-propenoate, 4,4'-(1-methylethylidene)bis[phenol], methyl 2-methyl-2-propenoate, (2,4,6-trioxo-1,3,5-triazine-1,3,5(2H,4H,6H)-triyl)tri-2,1-ethanediyl tri-2-propenoate and 1,3,5-tris(oxiranylmethyl)-1,3,5-triazine-2,4,6(1H,3H,5H)-trione (9CI) (CA INDEX NAME)

CM 1

CRN 114512-72-0
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 80111-79-1
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 3

CRN 71343-77-6
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

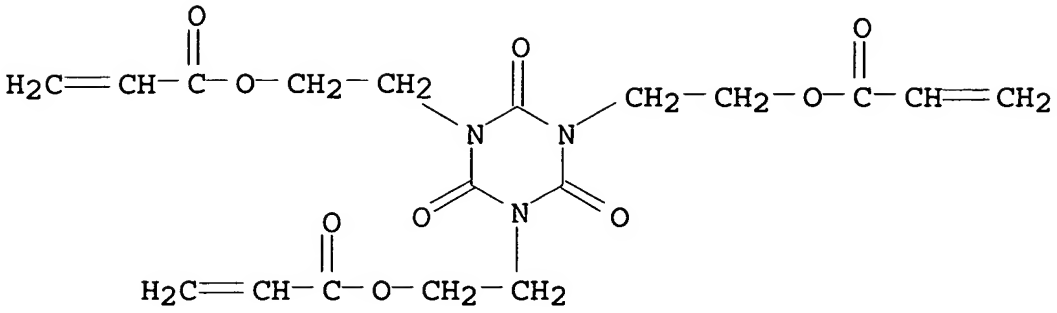
CM 4

CRN 68859-34-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

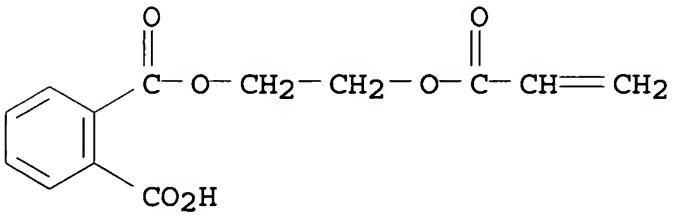
CM 5

CRN 40220-08-4
CMF C18 H21 N3 O9



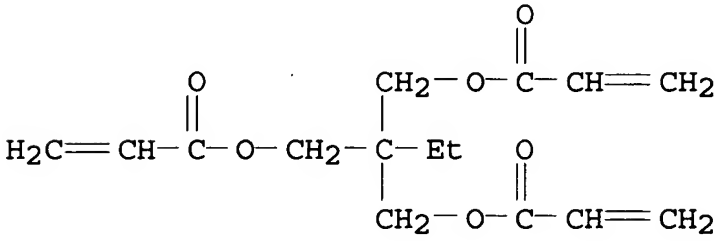
CM 6

CRN 30697-40-6
CMF C13 H12 O6



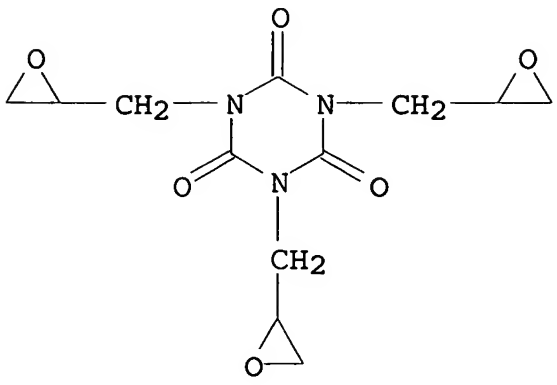
CM 7

CRN 15625-89-5
CMF C15 H20 O6



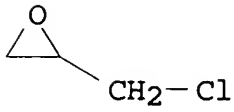
CM 8

CRN 2451-62-9
CMF C12 H15 N3 O6



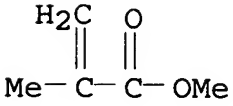
CM 9

CRN 106-89-8
CMF C3 H5 Cl O



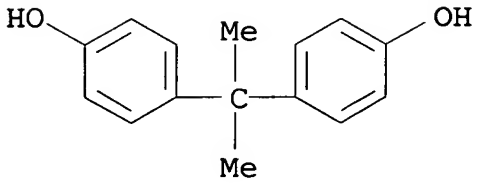
CM 10

CRN 80-62-6
CMF C5 H8 O2



CM 11

CRN 80-05-7
CMF C15 H16 O2



IC ICM C08G059-18
ICS C08G059-14; C08G059-18; C08L063-00; G03C001-00; G03C001-68; G03C001-71; G03F007-10
CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 76
IT Resists
(photo-, epoxy-phenolic resins **crosslinked** with acrylic compds. as)
IT **114481-98-0 114481-99-1 114482-00-7 114482-01-8 114482-02-9 114482-03-0 114482-04-1 114482-05-2 114592-89-1 114592-90-4 114592-91-5**
RL: TEM (Technical or engineered material use); USES (Uses)
(light-sensitive **resists**, for printed circuit boards)

L41 ANSWER 23 OF 32 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1987:139923 HCAPLUS
DOCUMENT NUMBER: 106:139923
TITLE: Radiocurable binders containing di(meth)acrylate **esters**
INVENTOR(S): Okubo, Tetsuo; Katayama, Shigeto; Yokoshima, Minoru
PATENT ASSIGNEE(S): Nippon Kayaku Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 61225161 A2 19861006 JP 1985-63268 1985 0329

PRIORITY APPLN. INFO.: JP 1985-63268 1985 0329

AB Resin compns. for solder resist inks contain CH2:CR1CO[O(CH2)5CO]a(OCHR1CH2)mO-p-C6H2X1X2SO2C6H2X3X4-p-O(CH2CHR3O)n[CO(CH2)5O]bCOCR4:CH2, (R1-4 = H, Me; X1-4 = H, Br; average m and n = 1-3; average a and b = 0-3; average a + b = 1-6). Thus, 1 mol SO2[C6H4-p-OCH2CH(Me)OH]2 was condensed with .apprx.2 mols ε-caprolactone and esterified with acrylic acid.

IT **107479-52-7**
RL: USES (Uses)
(solder **resist** inks, **UV**-curable)

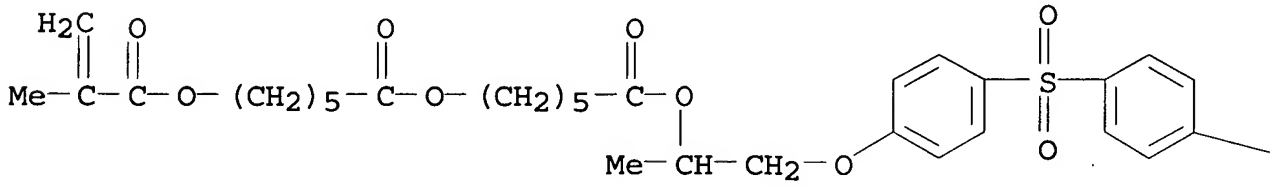
RN 107479-52-7 HCAPLUS

CN Hexanoic acid, 6-[[6-[(2-methyl-1-oxo-2-propenyl)oxy]-1-oxohexyl]oxy]-, sulfonylbis[4,1-phenyleneoxy(1-methyl-2,1-ethanediyl)] ester, polymer with 2-ethyl-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl di-2-propenoate, 2-hydroxyethyl 2-methyl-2-propenoate and α,α'-[sulfonylbis[(2,6-dibromo-4,1-phenylene)oxy-2,1-ethanediyl]]bis[ω-[(1-oxo-2-propenyl)oxy]poly[oxy(1-oxo-1,6-hexanediyl)]] (9CI) (CA INDEX NAME)

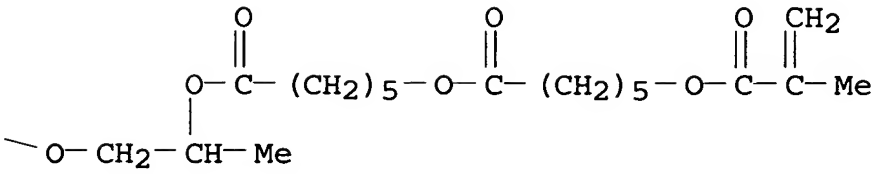
CM 1

CRN 107479-51-6
CMF C50 H70 O16 S

PAGE 1-A



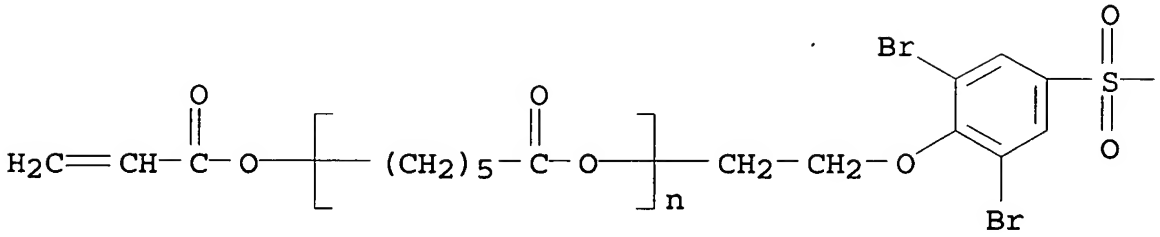
PAGE 1-B



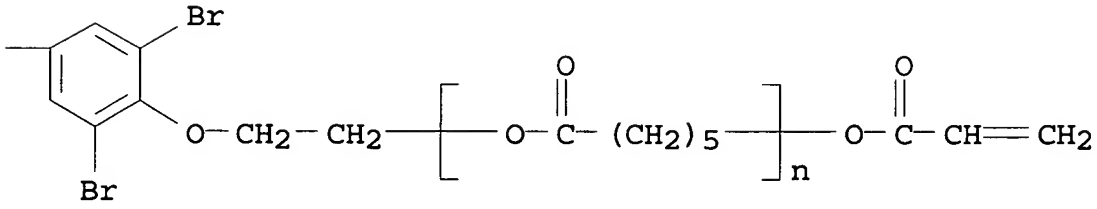
CM 2

CRN 107479-48-1
CMF (C6 H10 O2)n (C6 H10 O2)n C22 H18 Br4 O8 S
CCI PMS

PAGE 1-A

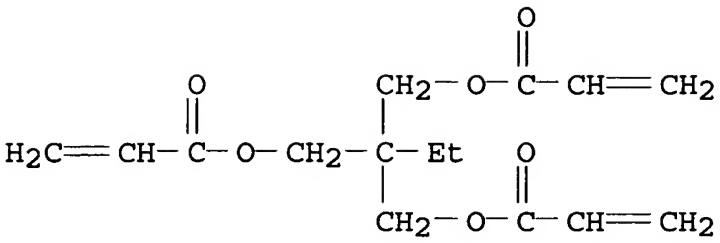


PAGE 1-B



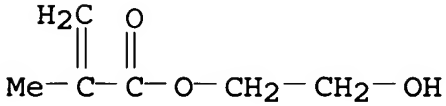
CM 3

CRN 15625-89-5
CMF C15 H20 O6



CM 4

CRN 868-77-9
CMF C6 H10 O3



IC ICM C07C147-10
ICS C08F220-12; C08F220-38
CC 42-12 (Coatings, Inks, and Related Products)
Section cross-reference(s): 74
IT Electron beam, chemical and physical effects
(**crosslinking** by, of solder resist inks containing acrylates)
IT **Crosslinking**
(radiochem., of solder resist inks containing acrylates, by electron beam)
IT 107479-23-2 **107479-52-7** 107528-84-7
RL: USES (Uses)
(solder **resist** inks, **UV**-curable)

L41 ANSWER 24 OF 32 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1987:129341 HCAPLUS
DOCUMENT NUMBER: 106:129341
TITLE: Photopolymerizing polymer composition for preparing dry film resist
INVENTOR(S): Uchida, Hiroyuki; Kishimoto, Juichiro
PATENT ASSIGNEE(S): Mitsubishi Rayon Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF

DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

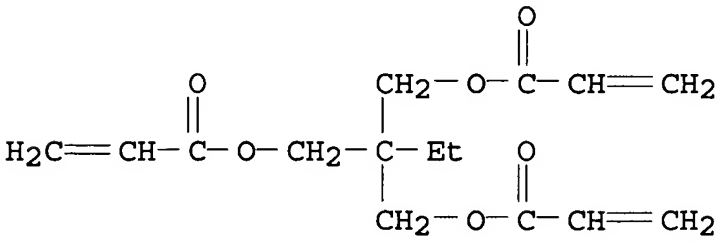
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 61186952	A2	19860820	JP 1985-27784	19850215
JP 03036422	B4	19910531		

PRIORITY APPLN. INFO.: JP 1985-27784 19850215

AB The polymer composition contains a binder resin, a **crosslinking** monomer having ≥2 ethylenic groups, a photopolymn. initiator, and 5-aminotetrazole. The binder resin is composed of methacrylic acid-Me acrylate-Me methacrylate polymer. The **crosslinking** monomer includes tetraethylene glycol diacrylate and trimethylolpropane triacrylate; benzophenone or Michler's **ketone** may be used as the photopolymn. initiator. A dry film resist may be prepared by coating the photopolymg. polymer composition on a polyester film. The resist may be developed by using only an aqueous alkaline solution

IT **15625-89-5**, Trimethylolpropane triacrylate
RL: MOA (Modifier or additive use); USES (Uses)
(**crosslinking** agent, dry-film **photoresist** with photopolymg. polymer composition containing, for development with aqueous alkaline solution)

RN 15625-89-5 HCAPLUS
CN 2-Propenoic acid, 2-ethyl-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester (9CI) (CA INDEX NAME)



IC ICM G03C001-00
ICS G03F007-00
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
IT Polymerization catalysts
(photochem., benzophenone-Michler's **ketone**, dry-film photoresists with photopolymg. polymer compns. containing)
IT **Crosslinking** agents
(photochem., diacrylates and triacrylates, dry-film photoresists with photopolymg. polymer compns. containing)
IT Electric circuits
(printed, dry-film photoresists for preparation of, containing **UV** photopolymg. polymer compns., for development with aqueous alkaline solns.)
IT **15625-89-5**, Trimethylolpropane triacrylate 17831-71-9, Tetraethylene glycol diacrylate
RL: MOA (Modifier or additive use); USES (Uses)
(**crosslinking** agent, dry-film **photoresist** with photopolymg. polymer composition containing, for development with aqueous alkaline solution)
IT 90-94-8, Michler's **ketone** 119-61-9, Benzophenone, uses and miscellaneous
RL: USES (Uses)
(photopolymn. initiator, dry-film photoresist with photopolymg. polymer composition containing, for development with aqueous alkaline solution)

L41 ANSWER 25 OF 32 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1987:86379 HCAPLUS
DOCUMENT NUMBER: 106:86379
TITLE: Radiation-curable inks for printed circuit boards
INVENTOR(S): Otaka, Hisao; Sugano, Takashi; Ishii, Hiroyuki; Nonomura, Tsutomu
PATENT ASSIGNEE(S): Toyo Ink Mfg. Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

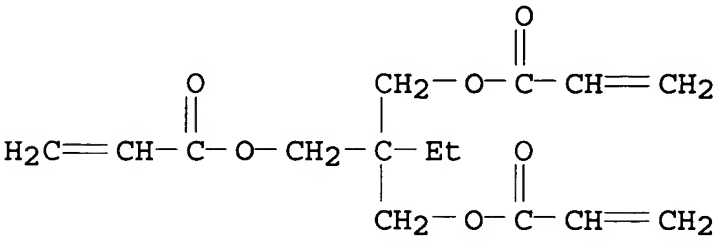
JP 61223073	A2	19861003	JP 1985-63769	1985 0329
PRIORITY APPLN. INFO.:			JP 1985-63769	1985 0329

AB A radiation-curable resin composition, useful as a dry offset-printing ink giving a pattern with good reproducibility and good resistance to an etching solution in the manufacture of a printed circuit board, comprises a film-forming resin containing carboxy or carboxylic anhydride groups, a phenol or bisphenol adduct with ethylene oxide treated with (meth)acrylic acid, and, optionally, a radical polymerization initiator. Thus, a composition comprising an **ester** of a 1:1 (molar) styrene-maleic anhydride copolymer and hydroxyethyl acrylate (acid value 150) 50, a resorcinol-ethylene oxide adduct (1.3:1 ratio) treated with acrylic acid (acid value 4.0) 18, a radical polymerization initiator 10, and pigments 22 parts was printed on a Cu foil laminate by dry offset printing with min. pattern width 50 μ and **UV**-cured. The laminate was etched with aqueous CuCl2 solution and treated with 3% aqueous NaOH solution to form a pattern with good reproducibility.

IT **15625-89-5**, Trimethylolpropane triacrylate
RL: USES (Uses)
(ink containing, as radiation-curable **resist**, for circuit board)

RN 15625-89-5 HCAPLUS

CN 2-Propenoic acid, 2-ethyl-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester (9CI) (CA INDEX NAME)



IC ICM C09D011-02

ICS C08F299-02
ICA G03C001-68
CC 42-12 (Coatings, Inks, and Related Products)
Section cross-reference(s): 76
IT **Crosslinking**
Polymerization
(radiochem., of ink resist on circuit board)
IT 108-31-6D, Maleic anhydride, reaction products with rosin, acrylates 818-61-1D, **esters** with maleated rosin **15625-89-5**, Trimethylolpropane triacrylate 51204-92-3 56361-55-8 63213-21-8
RL: USES (Uses)
(ink containing, as radiation-curable **resist**, for circuit board)

L41 ANSWER 26 OF 32 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1987:11229 HCAPLUS
DOCUMENT NUMBER: 106:11229
TITLE: Water-soluble photosensitive polymers
INVENTOR(S): Hayama, Kazuhide; Yamashita, Akira; Maruta, Riichiro
PATENT ASSIGNEE(S): Mitsubishi Yuka Fine Chemicals Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 61174202	A2	19860805	JP 1985-14906	1985 0129

PRIORITY APPLN. INFO.: JP 1985-14906 1985 0129

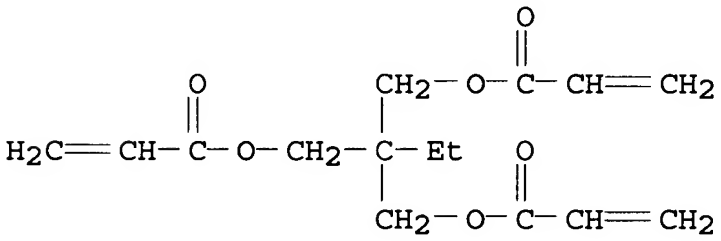
AB A water-soluble photosensitive polymer giving a developed image with sharp pattern edge is prepared by modifying a copolymer containing a tertiary N with unconjugated lone-pair electrons with a haloacetic acid alkylene glycol mono(meth)acrylate. Thus, 100 parts copolymer from N,N-dimethylaminoethyl methacrylate 70, Bu

methacrylate 20, and lauryl methacrylate 10 parts was treated with 86 parts monochloroacetic acid **ester** with 2-hydroxyethyl acrylate in water at 60° for 6-8 h to give a 40% aqueous photosensitive polymer solution A composition comprising the polymer solution 100, trimethylolpropane triacrylate 5, and bis(4-dimethylaminophenyl) **ketone** 2 parts was coated on an Al plate to a thickness of 100 μ (dry), **UV**-cured, washed with water, and etched to give a lithog. plate with sharp pattern edges.

IT **15625-89-5**
RL: USES (Uses)
(curing agent, quaternary ammonium salt-containing water-soluble polymer compns. containing, for water-developable **photoresists**)

RN 15625-89-5 HCAPLUS

CN 2-Propenoic acid, 2-ethyl-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester (9CI) (CA INDEX NAME)



IC ICM C08F008-44
ICS C08F008-02; G03C001-71; G03F007-10

CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST aminoethyl methacrylate copolymer photosensitive; butyl methacrylate copolymer photosensitive; lauryl methacrylate copolymer photosensitive; chloroacetic acid **ester** hydroxyethyl acrylate; photosensitive polymer photolithog water developable; photoresist water sol polymer; quaternary ammonium salt polymer photoresist; trimethylolpropane triacrylate photosensitive polymer; dimethylaminophenyl **ketone** photochem **crosslinking** catalyst

IT **15625-89-5**
RL: USES (Uses)
(curing agent, quaternary ammonium salt-containing water-soluble polymer compns. containing, for water-developable **photoresists**)

IT 90-94-8, Bis(4-dimethylaminophenyl) **ketone**
RL: USES (Uses)
(photocuring agent, for water-soluble photosensitive polymers)
IT 16975-72-7D, Ethylene glycol acrylate chloroacetate, dimethylaminoethyl methacrylate copolymers quaternized with 30607-60-4D, quaternized with haloacetic acid **esters** with alkylene glycol monoacrylate 34369-32-9D, quaternized with haloacetic acid **esters** with alkylene glycol monoacrylate 105759-78-2D, quaternized with haloacetic acid **esters** with alkylene glycol monoacrylate 105759-79-3D, quaternized with haloacetic acid **esters** with alkylene glycol monoacrylate 105759-84-0D, dimethylaminoethyl methacrylate copolymers quaternized with 105760-00-7D, dimethylaminoethyl methacrylate copolymers quaternized with
RL: USES (Uses)
(photosensitive, as water-developable photoresists for photolithog., preparation of)

L41 ANSWER 27 OF 32 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1986:535643 HCAPLUS
DOCUMENT NUMBER: 105:135643
TITLE: Photoresists
INVENTOR(S): Nagasaka, Hideki; Takahashi, Noriaki
PATENT ASSIGNEE(S): Mitsubishi Chemical Industries Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 61044913	A2	19860304	JP 1984-166242	19840808

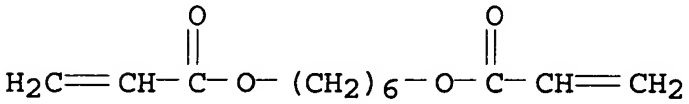
PRIORITY APPLN. INFO.: JP 1984-166242 19840808

AB Photoresists resistant to soldering temps. and electroless plating solns., useful in manufacture of printed circuit boards, contain bisphenol epoxy resin (meth)acrylates (mol. weight 3000-100,000),

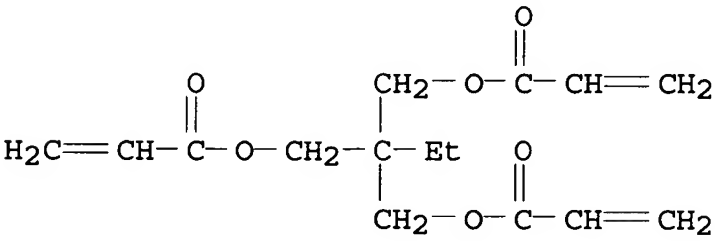
polyenes, and photopolymn. initiators. Thus, a mixture of epoxy resin acrylate 4.5, acrylate monomer 3, Ph2CO 0.3, (4-Me2NC6H4)2CO 0.013, and Victoria Pure Blue 0.004, and MEK 10 g was coated on a 25-μ polyester film to 30 μ (dry), placed on a phenolic resin-impregnated paper laminate containing a catalyst for chemical plating, and **UV**-cured through a mask. After the polyester film was removed, the laminate was developed in CCl3CH3, **UV**-cured, and heated to give a permanent image withstanding 30 s in solder at 260° or 15 h in a chemical plating solution without peeling or blistering.

IT **13048-33-4 15625-89-5**
RL: USES (Uses)
(**photoresists**, for printed circuit boards)

RN 13048-33-4 HCAPLUS
CN 2-Propenoic acid, 1,6-hexanediyl ester (9CI) (CA INDEX NAME)



RN 15625-89-5 HCAPLUS
CN 2-Propenoic acid, 2-ethyl-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester (9CI) (CA INDEX NAME)



IC ICM C08F299-02
ICS C08F002-48; H05K003-00

CC 42-10 (Coatings, Inks, and Related Products)
Section cross-reference(s): 76

ST epoxy resin acrylate photoresist; printed circuit board photoresist; benzophenone catalyst photocuring; **crosslinking** catalyst photoresist

IT **Crosslinking** catalysts
(photochem., aromatic **ketones**, for epoxy resin allyl

ether and acrylate photoresists)
IT 106-95-6D, ethers with epoxy resins **13048-33-4**
15625-89-5 55205-38-4 55818-57-0 61970-25-0
66710-97-2 70726-46-4D, acrylates and allyl ethers
81627-90-9D, acrylates and allyl ethers 104365-39-1
RL: USES (Uses)
(**photoresists**, for printed circuit boards)

L41 ANSWER 28 OF 32 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1985:462596 HCAPLUS
DOCUMENT NUMBER: 103:62596
TITLE: Photopolymerizing resin composition
PATENT ASSIGNEE(S): Mitsubishi Rayon Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 60057337	A2	19850403	JP 1983-164684	1983 0907
PRIORITY APPLN. INFO.:			JP 1983-164684	1983 0907

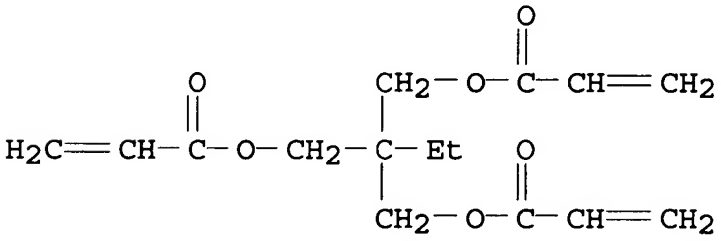
AB A photopolymg. composition mainly for dry film resist is prepared by coating the support with a composition containing (1) solution of thermoplastic polymer binder obtained by solution polymerization in solvent system mainly consisting of iso-PrOH, (2) **crosslinking** monomer having ≥2 ethylenic bonds, and (3) photopolymn. initiator, followed by evaporation of solvent. Iso-PrOH is a good solvent for the components of polymerization reaction and is easily evaporated so that the workability of production is increased. Thus, a mixture of iso-PrOH 200, Me methacrylate 140, Et acrylate 20, and methacrylate acid 40 g was warmed to 80° under N, with stepwise addition of azobisisobutyronitrile in iso-PrOH, temperature increased up to b.p. of iso-PrOH, and final addition of iso-PrOH. Total amount of iso-PrOH added was 160 g. Coating solution prepared by

mixing the above resin solution 228 parts with trimethylolpropane triacrylate 50, tetraethylene glycol diacrylate 20, benzophenone 1, Michler's **ketone** 0.2, tolyltriazole 0.4, and methylene blue 0.75 part was coated on polyester film and dried under hot air stream (3 m/s; 80-110°). Polyethylene protective film was laminated on the material and removed before use. The obtained dry film was laminated on Cu-plated board and patternwise exposed to **UV**. After removal of the polyester base the board was developed using aqueous Na2CO3 spray, treated by neutral detergent, washed, treated with NH4 persulfate solution, washed, treated with H2SO4, washed, and then plated in CuSO4 solution After washing and HF treatment the material was soldered cathodically using a solution containing Sn, Pb, fluoroboric acid, boric acid, and peptone. Solder plating produced no failure.

IT **15625-89-5**
RL: USES (Uses)
(**photoresist** coating composition containing, for printed circuit preparation)

RN 15625-89-5 HCAPLUS

CN 2-Propenoic acid, 2-ethyl-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester (9CI) (CA INDEX NAME)



IC ICM G03C001-68
ICS G03C001-71; G03F007-10

ICA C08F002-48

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 76

IT 61-73-4 119-61-9, uses and miscellaneous **15625-89-5**
17831-71-9 29385-43-1
RL: USES (Uses)
(**photoresist** coating composition containing, for printed circuit preparation)

L41 ANSWER 29 OF 32 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1985:438783 HCAPLUS
DOCUMENT NUMBER: 103:38783
TITLE: Photocurable resin compositions resistant to sandblasting
PATENT ASSIGNEE(S): Asahi Chemical Industry Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 60010242	A2	19850119	JP 1983-117007	19830630

PRIORITY APPLN. INFO.: JP 1983-117007 19830630

AB Photocurable resin compns. applicable to screen printing are composed of (1) a monofunctional ethylenically unsatd. compound, (2) photopolymn. initiator, (3) thermal polymerization inhibitor, (4) antifoaming agent and/or leveling agent, and (5) urethane polymer of the formula R(ZZ1)m(ZZ2)nZR (R = group having ≥1 ethylenic bond; Z = divalent urethane group; Z', Z2 = polyether moiety, polyester moiety, or polyether-polyester block copolymer moiety; m + n ≥ 1; m, n = 1-10). The composition does not require solvent in screen printing, and is resistant to sandblasting so that etching of hard materials (e.g., glass, ceramics) using the resin pattern is possible. Thus, a prepolymer with 2 terminal isocyanate groups was prepared by dissolving ethylene oxide-propylene oxide block copolymer diol (mol. weight 2000) (ethylene oxide content 35%) 100, poly(ethylene adipate) diol (mol. weight 2000) 100, tolylene diisocyanate 26, and Bu2Sn laurate 0.5 part and heating at 70° for 2 h. Reaction of the product with 15 parts 2-hydroxyethyl methacrylate and 0.025 parts 2,6-di-tert-butyl-p-cresol [128-37-0] at 70° for 2 h gave an unsatd. polyurethane prepolymer. The prepolymer 100, 2-hydroxyethyl methacrylate 50, phthalic acid mono(2-hydroxyethyl methacrylate) **ester** 50, 2,2'-dimethoxyphenylacetophenone [66659-59-4] 4, silicone resin (KP 324) 0.4, and phthalocyanine

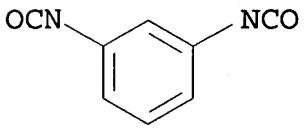
green 0.3 part were mixed to obtain the title composition A glass plate was printed, using the composition and a stainless steel screen, with a pattern, which was cured by **UV** irradiation The plate with the pattern was sandblasted using 200-mesh Alundum (3 kg/cm2; 30 s). The pattern was removed by immersion in 5% NaOH with vibration. A fine-etched pattern having 300-μm resolution was obtained on the glass plate.

IT **96989-02-5**
RL: USES (Uses)
(photocurable, **resists**, for screen printing)

RN 96989-02-5 HCAPLUS
CN Hexanedioic acid, polymer with carboxymethyl 2-methyl-2-propenoate, 1,3-diisocyanatomethylbenzene, 1,2-ethanediol, 1,2-ethanediyl bis(2-methyl-2-propenoate), 2,5-furandione, 2-hydroxyethyl 2-methyl-2-propenoate, methyloxirane, oxirane and 1,2,3-propanetriol mono(2-methyl-2-propenoate) (9CI) (CA INDEX NAME)

CM 1

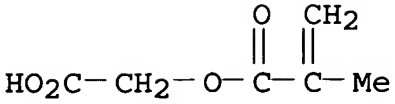
CRN 26471-62-5
CMF C9 H6 N2 O2
CCI IDS



D1—Me

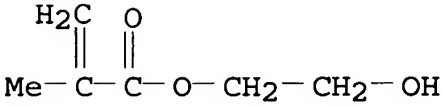
CM 2

CRN 6852-90-0
CMF C6 H8 O4



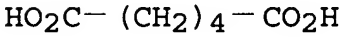
CM 3

CRN 868-77-9
CMF C6 H10 O3



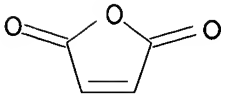
CM 4

CRN 124-04-9
CMF C6 H10 O4



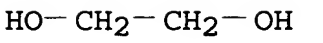
CM 5

CRN 108-31-6
CMF C4 H2 O3



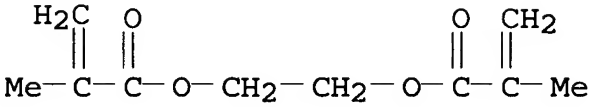
CM 6

CRN 107-21-1
CMF C2 H6 O2



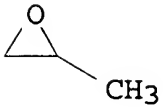
CM 7

CRN 97-90-5
CMF C10 H14 O4



CM 8

CRN 75-56-9
CMF C3 H6 O



CM 9

CRN 75-21-8
CMF C2 H4 O

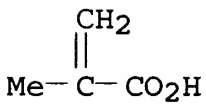
CM 10

CRN 50853-28-6
CMF C7 H12 O4

CCI IDS

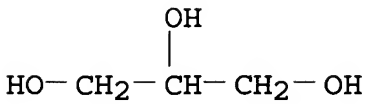
CM 11

CRN 79-41-4
CMF C4 H6 O2



CM 12

CRN 56-81-5
CMF C3 H8 O3



IC ICM G03C001-68
ICS C08F299-06; G03C005-00; G03F007-00
CC 42-10 (Coatings, Inks, and Related Products)
Section cross-reference(s): 74
IT **Crosslinking** catalysts
(photochem., dimethoxyphenylacetophenone, for acrylic polyurethane compns., sandblasting-resistant, resists for screen printing)
IT 96988-96-4 **96989-02-5**
RL: USES (Uses)
(photocurable, **resists**, for screen printing)
IT 66659-59-4
RL: USES (Uses)
(photosensitizers, for **UV**-curable acrylic polyurethane sandblasting resists)

L41 ANSWER 30 OF 32 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1985:205594 HCAPLUS
DOCUMENT NUMBER: 102:205594
TITLE: Ultraviolet-curable solder resist inks

PATENT ASSIGNEE(S): Meidensha Electric Mfg. Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 59213780	A2	19841203	JP 1983-73004	1983 0427

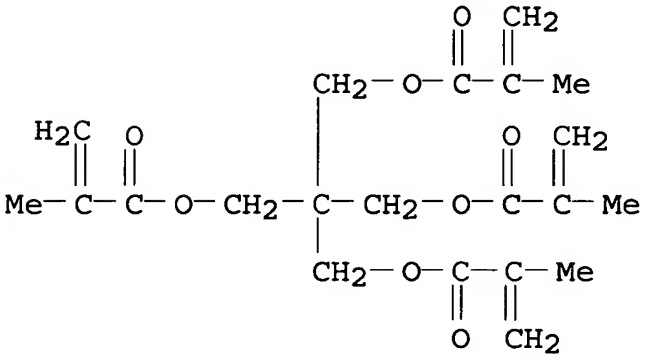
PRIORITY APPLN. INFO.: JP 1983-73004 1983 0427

AB The title inks contain essentially (a) 10-50 parts epoxy resins (epoxy-containing diacrylates of bisphenol A and/or novolak, mol.weight 400-2500), (b) 10-60 parts reactive monomers [mixts. of 2-hydroxyethyl (meth)acrylates and polyfunctional (meth)acrylates], (c) 1-8 parts photosensitizers (mixts. of Ph2CO [119-61-9] and aromatic tertiary amines at weight ratios 0.5-2.0), and (d) 10-50 parts fillers (talc and/or CaCO3). The cure rate is high even in the presence of metallic Cu, and the resist films have high film hardness and improved adhesion. Thus, Ripoxy SP-1509 (epoxy diacrylate 25, trimethylolpropane triacrylate 15, 2-hydroxyethyl methacrylate (I) 15, Ph2CO 2, Michler's **ketone** [90-94-8] 1, talc 35, silica 7, pigment (Cyanine Green or Cyanine Blue) 1, and p-HOC6H4OMe 0.2 part were roll-milled to 15 μm to prepare a solder resist ink, which was printed on a Cu plate and **UV**-irradiated (80 W/cm) for 15 s. The film showed no change in a solder bath at 260 ± 5° for 30 s, excellent adhesion (100/100 in a cross-cut test), pencil hardness ≥4H, excellent dry insulation properties (volume resistivity ≥1015 Ω-cm, surface resistivity ≥1013 Ω), excellent chemical resistance [no change after dipping in 10% HCl, 10% aqueous NaOH, Me2CO or Triclene for 8 h or in a gold plating liquid (pH 3.5-4.0) at 50° for 30 min, resp.], and was stable at 35° for ≥4 mo. When hydroxypropyl methacrylate was used instead of I, the resist film showed adhesion (40/100) and pencil hardness ≤3H.

IT **3253-41-6D**, polymers with diacrylate **96570-66-0**

RL: USES (Uses)
(solder **resists**, photocurable, for printed circuit board manufacture)

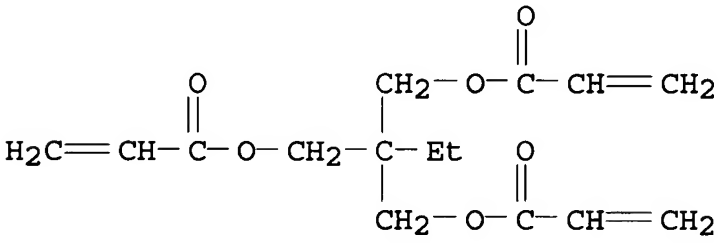
RN 3253-41-6 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 2,2-bis[[(2-methyl-1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester (9CI) (CA INDEX NAME)



RN 96570-66-0 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 2-hydroxyethyl ester, polymer with 2-ethyl-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl di-2-propenoate and (1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)] di-2-propenoate (9CI) (CA INDEX NAME)

CM 1

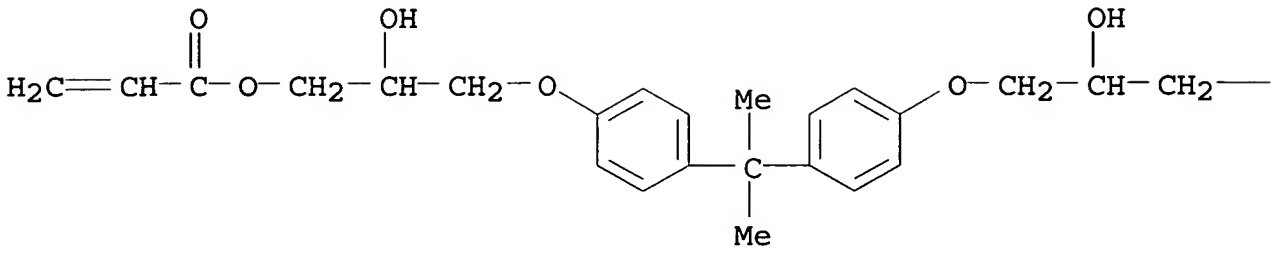
CRN 15625-89-5
CMF C15 H20 O6



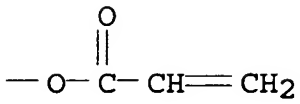
CM 2

CRN 4687-94-9
CMF C27 H32 O8

PAGE 1-A

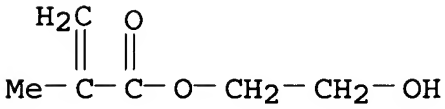


PAGE 1-B



CM 3

CRN 868-77-9
CMF C6 H10 O3



IC ICM C09D011-10
ICS G03C001-68
CC 42-12 (Coatings, Inks, and Related Products)
Section cross-reference(s): 76
ST circuit printing **UV** curable ink; **UV** curable solder resist ink; epoxy diacrylate solder resist ink; bisphenol A diacrylate solder resist ink; novolak diacrylate solder resist ink; hydroxyethyl methacrylate solder resist ink; trimethylolpropane triacrylate solder resist ink; photosensitizer compn solder resist ink; benzophenone compn solder resist ink;

Michlers **ketone** solder resist ink
IT Epoxy resins, uses and miscellaneous
RL: USES (Uses)
(acrylic, solder resists, **UV**-curable, for printed circuit board manufacture)
IT Acrylic polymers, uses and miscellaneous
RL: USES (Uses)
(epoxy, solder resists, **UV**-curable, for printed circuit board manufacture)
IT **Crosslinking** catalysts
(photochem., benzophenone and aromatic tertiary amines, for acrylic solder resist inks for printed circuit board manufacture)
IT Electric circuits
(printed, boards, manufacture of, **UV**-curable solder resist inks for)
IT 14807-96-6, uses and miscellaneous
RL: USES (Uses)
(filler, for **UV**-curable solder resist inks)
IT 471-34-1, uses and miscellaneous
RL: USES (Uses)
(solder resist inks containing, **UV**-curable, acrylic polymer-based, for printed circuit board manufacture)
IT **3253-41-6D**, polymers with diacrylate **96570-66-0**
RL: USES (Uses)
(solder **resists**, photocurable, for printed circuit board manufacture)

L41 ANSWER 31 OF 32 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1985:204893 HCAPLUS
DOCUMENT NUMBER: 102:204893
TITLE: Ultraviolet-curable solder resist inks
PATENT ASSIGNEE(S): Meidensha Electric Mfg. Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 59213779	A2	19841203	JP 1983-70142	1983 0422

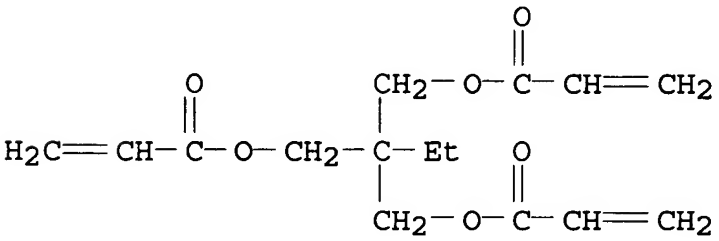
PRIORITY APPLN. INFO.: JP 1983-70142 1983 0422

AB The title inks contain (a) epoxy resins (diacrylates of Bisphenol A and/or novolak, mol. weight 400-2500, acid value ≤9), (b) reactive monomers [trimethylolpropane triacrylate (I) [**15625-89-5**] and/or 2-hydroxyethyl methacrylate (II) [868-77-9]], (c) ≥1 photosensitizer selected from Ph2CO [119-61-9], iso-amyl p-dimethylaminobenzoate (III) [21245-01-2], and metallic salts of naphthenic acid, (d) talc, and (e) silica (as thixotropic agent). Cure rate of the inks is high, even in presence of metallic Cu, and the **resist** films obtained have high film hardness, excellent adhesion, satisfactory resistance to gold plating liqs., and flexibility. Thus, Ripoxy SP-1509 [87502-24-7] (epoxy diacrylate) 30, I 16, II 18, Ph2CO 2, III 2, Michler's **ketone** 1, talc 30, colloidal silica 5, Cyanine Green 0.9, KS-66 (silicone antifoaming agent) 0.2, Kayamer PM-2 (phosphate) 1, and hydroquinone mono-Me ether 0.1 part were blended and kneaded with a 3-roll mill to ≤15 μm to prepare a solder **resist** ink. **Resist** film therefrom showed film hardness ≥4H and excellent adhesion to a Cu plate.

IT **15625-89-5**
RL: USES (Uses)
(solder **resist** inks containing, **UV**-curable, for printed circuit boards)

RN 15625-89-5 HCAPLUS

CN 2-Propenoic acid, 2-ethyl-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester (9CI) (CA INDEX NAME)



IC ICM C09D011-10
ICS G03C001-68

CC 37-6 (Plastics Manufacture and Processing)
Section cross-reference(s): 76

ST circuit printed **UV** curable ink; **UV** curable solder resist ink; epoxy resin solder resist ink; bisphenol diacrylate solder resist ink; novolak diacrylate solder resist ink; trimethylolpropne triacrylate solder resist ink; hydroxyethyl methacrylate solder resist ink; photosensitizer solder resist ink; amyl dimethylaminobenzoate solder resist ink; Michlers **ketone** solder resist ink; metal naphthenate solder resist ink; thixotropic agent solder resist ink

IT **Crosslinking** catalysts
(photochem., for epoxy acrylate solder resist inks for printed circuit boards)

IT Electric circuits
(printed, boards, manufacture of, solder resist inks for, **UV**-curable, epoxy acrylate-based)

IT 868-77-9
RL: USES (Uses)
(epoxy acrylate inks containing, **UV**-curable, for solder resists)

IT 79-10-7D, **esters** with epoxy resins 4687-94-9
15625-89-5 53814-24-7
RL: USES (Uses)
(solder **resist** inks containing, **UV**-curable, for printed circuit boards)

L41 ANSWER 32 OF 32 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1981:426765 HCAPLUS
DOCUMENT NUMBER: 95:26765
TITLE: Composition containing polyacrylate or methacrylate from pentaerythritol and a cellulosic **ester**, its application and an abrasion-resistant product
INVENTOR(S): Russell, Raymond J.
PATENT ASSIGNEE(S): Panelgraphic Corp., USA
SOURCE: Fr. Demande, 26 pp.
CODEN: FRXXBL
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2449715	A1	19800919	FR 1980-3720	1980

					0220
FR 2449715	B1	19841005			
US 4308119	A	19811229	US 1980-104351		
					1980 0107
PRIORITY APPLN. INFO.:			US 1979-13418	A	1979 0221
			US 1980-104351	A	1980 0107

AB Compns. curable by actinic radiation to abrasion-resistant coatings contain pentaerythritol poly(meth)acrylates, cellulose alkanoates or nitrate, or photosensitizers. Thus, a solution of pentaerythritol tetraacrylate **[4986-89-4]** 14.2, cellulose acetate butyrate [9004-36-8] (13% AcO, 37% butyrate, viscosity of 20% solution 64-124 P at 25°) 1.4, oxybis(2-chloroacetophenone) 0.8, and solvents 84.4 parts is sprayed to 23 μ on PVC and dried at ambient temperature to a 7.5-μ, nonfriable coating, which after curing by a high-intensity **UV** lamp for 3 s **resists** 1000 double cycles of abrasion, compared with 2 for a vinyl-urethane coating.

IC C09D003-81

CC 42-10 (Coatings, Inks, and Related Products)

ST abrasion resistance coating photocurable; cellulose **ester** coating photocurable; pentaerythritol acrylate coating photocurable; **crosslinking** photochem coating; PVC abrasion resistant coating

IT Abrasion-resistant materials
(coatings, pentaerhythritol acrylate-cellulose **ester**, photocured, on PVC)

IT **Crosslinking**
(photochem., of pentaerythritol acrylate-cellulose **ester** coatings)

IT Coating materials
(photocurable, pentaerythritol acrylate and cellulose **esters**, abrasion-resistant)

IT 9002-86-2
RL: USES (Uses)
(coatings for, photocured pentaerythritol acrylate-cellulose **ester** as abrasion-resistant)

IT 3253-41-6 4986-89-4

RL: TEM (Technical or engineered material use); USES (Uses)
(coatings, containing cellulose **esters**, photocurable and abrasion-resistant)

=>